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News in Brief

Dried Fruits Week in Mildura was a very successful effort.

An association to improve local fruit market in Melbourne and to advertise standardised fruit has been formed. Growers, wholesalers and retailers are on the committee.

Victorian berry growers complain bitterly of the effect of the Sugar Agreement. The price fixing by the Fruit Industry Sugar Concession Committee, growers state, has proved disastrous to growers.

The effect on Apple trees of lime sulphur, following Bordeaux, is described in this issue by Dr. Cunningham, N.Z. Govt. Mycologist. Despite opinions to the contrary, Dr. Cunningham states, no injury is caused provided lime sulphur be not used in excess.

AUSTRALIAN APPLE AND PEAR EXPORT COUNCIL.

Meets at Sydney October 9.

THE ANNUAL MEETING of the Australian Apple and Pear Export Council will meet at Sydney commencing on October 9.

It was originally planned that the conference would be held at Melbourne, but owing to the shortage of accommodation, due to the Centenary celebrations and the fact that there will be freight discussions with the O.S.R.A., the venue will be changed to Sydney.

Summer spot on Pears can be controlled by spring sprayings—two Bordeaux pre-blossom applications and one at half strength when the fruit has set.

Methods for combating scale insects on deciduous and citrus trees are dealt with in this issue by Mr. K. M. Ward, M.Agr.Sc., Asst. Entomologist, Victorian Dept. of Agriculture.

Weather conditions are so far favorable for heavy infestation of the destructive green Peach aphid this spring; Goulbourn Valley and Doncaster orchardists, beware!

The relative merits of Peas and Beans as cover crops are discussed in this issue by our River Murray Correspondent. Where super was used the benefits were outstanding.

August is a good month for planting selected Passion Fruit seed. The young

plants should be set out in early spring when most of the frosts are over.

The use of carbon dioxide for fruit transport is rapidly increasing in U.S.A., thus overcoming transit and fungus rots. Solid carbon dioxide is loaded into refrigerator cars.

Tests with potash manuring are being conducted at Renmark, South Australia.

While shallow cultivation may be all right for the Murrumbidgee Irrigation Areas, the River Murray correspondent of the "Fruit World" considers deep working necessary for the Murray irrigation districts, which work on a roster system.

The wise use of fertilisers benefits fruit crops. Dried fruits, for instance, where properly manured, have more "body."

While under no illusions as to the seriousness of Fireblight, Dr. R. J. Noble, Biologist, N.S.W. Department of Agriculture, and his fellow scientists, believe there is no practical danger of the introduction of the disease by importing Apples from New Zealand.

Personal

Mr. Geoffrey W. Brown, president of the Victorian Fruit Marketing Association and the delegate of the Australian Apple and Pear Export Council to the recent Empire Fruit Conference, is returning by the "S.S. Balranald," due at Fremantle on August 7, and at Melbourne some ten days later.

An Apple tree census is being taken in Tasmania. This is much needed.

Other States would do well to follow this example.

Congratulations to two prominent Tasmanian fruitgrowers who were returned to Parliament at the recent State elections,—Mr. Neil Campbell, M.H.A. (for Wilmot), and Mr. B. J. Pearsall (for Franklin). Mr. Pearsall is chairman of the State Fruit Advisory Board and a delegate to the Australian Apple and Pear Export Council.

Other fruitgrowers who contested the elections, and who put up an excellent showing though not returned were Messrs. J. H. Astell (for Darwin) and C. W. Frost (the endorsed Labor candidate for Franklin).

Mr. S. Fish, M.Agr.Sc., is now the Victorian Government Plant Pathologist in place of Mr. D. B. Adam, B.Agr.Sc., who has transferred to the Waite Research Institute, Adelaide.

Mr. Fish is highly esteemed. His work on fungus diseases has been of great value to Goulbourn Valley growers, and his researches into black spot and summer spot has proved of great service to Doncaster growers and the State generally.

Mr. F. H. du Boise, managing director of the Mt. Arthur Shipping and Agency Co. Ltd., agents for the Clan Line, has been elected chairman of the Overseas' Shipping Representatives' Association. Mr. E. A. Eva, manager for Australia of the Aberdeen and Commonwealth Line, the retiring chairman, becomes vice-president.

Obituary

Death of Mr. A. S. Barr, Brisbane.

By the death of Mr. A. S. Barr, who passed away on June 25, Brisbane has lost one of the oldest and most respected members of the fruit trade. Mr. Barr suffered a severe attack of influenza some months ago, from which he never fully recovered. His death is a great shock to all those who were privileged to have business dealings with him. In establishing a business in Brisbane in 1888, Mr. Barr was one of

FRUIT WRAPPING PAPER FREED FROM SALES TAX.

The activity of the Australian Apple and Pear Export Council in having fruit wrapping paper on the list of goods exempt from sales tax is much appreciated.

In addition to the fruit wrapping having been freed from sales tax, since September, 1932, the activity of the council has been rewarded, in that the retrospective sales tax prior to that date has been annulled, and those who paid the sales tax can secure a refund on tax paid.

the founders of the Brisbane Fruit Exchange. He ultimately became a director, and also was chairman on several occasions.

On account of his extensive travelling, Mr. Barr was well known in most of the fruit-growing districts of Queensland, New South Wales, Victoria and Tasmania. For a considerable time past the management of the business has been divided between Mr. Barr and his son-in-law, Mr. A. Martin, and the latter has now taken over sole control, and will continue the firmly-established business on the same lines that have made it so successful in the past.

Regret will be felt by all at the death of Mr. John Leslie Fosbery, Melbourne shipping manager for Dalgety & Co., at the age of 53 years. The late Mr. Fosbery was highly esteemed: he was prominent, among other things, in his knowledge and experience in the shipping of fruit. He leaves a widow and two sons.

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QUERIES

QUESTIONS

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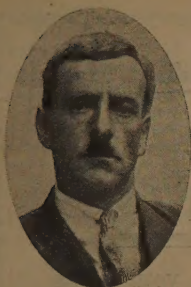
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Mr. G. W. Brown.

Empire Fruitgrowers' Conference—Apple and Pear Section

Minutes of Meetings on June 11, 12 and 13, 1934

IMPORTANT ASPECTS of the Australian Apple and Pear Export industry in its relation to Empire supplies are dealt with in the report just to hand from Mr. Geoffrey W. Brown, the Australian delegate to the Empire Producers' Conference.

In a covering letter to the chairman of the Australian Apple and Pear Export Council (Mr. J. B. Mills), Mr. Brown writes:

The main problem of the conference has been to reconcile the attitude of the various Dominions and the home producers in the division of the United Kingdom markets. The chief difficulty there was, of course, the clashing of interests between Nova Scotia and the home growers, and, as you will see, Canada is taking a leaf from our book, and attempting a qualitative restriction.

The question of closed periods or quotas was discussed, but it is understood that there are considerable and possibly insurmountable difficulties in the way of these being put into operation, as it would obviously be impossible to vary any trade agreement in such a way as to refuse to take produce at certain times of the year, and this would mean discriminating restrictions between countries, and so cannot very well be done.

Quotas are far too difficult

to attack, as, after we had agreed on Empire producers' quotas, it would be necessary to impose quotas on foreign countries, and, of course, the difficulty of varying these in accordance with crops and supplies available is immense. I shall watch this very carefully, as the request will be put to the Ministry by the National Farmers' Union very shortly.

I saw Major Elliott, the Minister for Agriculture, and explained the Australian position to him, and at their request, the Canadian outlook as well, and suggested that all these restrictions were qualitative and easily enforced, but were only suicidal if other countries were allowed to make up the quantities we have tried to reduce. I have heard here not only of Argentine and Chilean competition, but even Japanese Apples are now appearing on the market—splendidly packed.

It is important to have a permanent advisory committee in London.

Present: G. W. Brown, Australian Apple and Pear Export Council, chairman; Lt. Col. Sir R. Eccles Snowden, V.D., chairman Fruit Section, British Producers' Empire Organisation; Sir Edward Davson, Bart., K.C.M.G., chairman B.E.P.O.; Dr. H. E. Kendall, chairman Canadian Horticultural Council; L. F. Burrows, Canadian H.C.; L. Hayes, British Columbia; W. B. Gornall, Canadian Government Fruit Trade Commissioner; J. A. Campbell, Chief of Horticultural Department, N.Z. Government; H. Turner, N.Z. Fruit Board; G. M. Dykes, S. African Co-op. Deciduous Fruit Exchange Ltd.; Sir William Lobjoit, W. P. Seabrook, W. T. Edmonds, S. W. Mount, and J. E. Sandall, National Farmers' Union; Major E. A. O. Newcombe, D.S.O., Acting Sec., B.E.P.O.; H. C. Gill, secretary Fruit Section, B.E.P.O., Conference Secretary.

Attending: F. Capell, Overseas Farmers' Co-op. Federations Ltd.; W. H. Barker and R. G. R. Wall, Ministry of Agriculture; W. G. Freeman, B.Sc., Imperial Institute; Mr. Folley (Messrs. Beckett), J. F. Tamblyn, Imperial Fruit Show; Mr. Palau (Furness Withy Line), R. R. James (Canadian Pacific Railway), Mr. Henderson (Cunard Line), Mr. Dashper (Union Castle Line), Mr. Knox (Imperial Economic Committee).

1. The Organised Development of Fruit Growing Within the Empire.

Mr. H. Turner, N.Z., opened a discussion on the desirability of restricting future planting; he was followed by representatives of Canada, Australia, S. Africa and the U.K. The following resolution moved by Mr. Turner, seconded by Mr. Hayes (British Columbia) was agreed to unanimously—

"While the present unsatisfactory state of the export market for Apples continues, further planting of new areas in the overseas Dominions for export purposes be discouraged."

2. Safeguarding Position of British and Dominion Supplies.

There was a full discussion of various points raised under this heading. All delegations took part in the discussion, but no resolution was put forward.

3. Consideration of Measure of Achieving Clearer Markets.

The representative of the U.K. opened this discussion, and very full consideration was given to every point.

Qualitative Restrictions Preferred to Quotas—Co-ordination of Empire Supplies—Standard "Canadian" Case Advocated, Also Grade Names "Extra Fancy, Fancy and C Grade."

(Important Report by Mr. Geoffrey W. Brown.)

The question of closed periods was raised, especially by the U.K. delegates.

The following resolutions were carried unanimously—

(1) "That the proposals, as appended, put forward by the representative of Canada, Australia and N.Z., for the maintenance of clearer markets be approved by this conference."

Canadian Proposal—

That it be recommended (1) That the export from Canada of all Apples of Domestic and "C" grade, which would arrive at United Kingdom ports prior to October 15 be prohibited.

(2) That only domestic and "C" grade of 2½ in. and size 200 up respectively (except Cox Orange and Jonathan) be shipped so as to arrive between October 12 and October 31.

(3) That the export of all soft varieties, such as Duchess of Oldenburgh, St. Lawrence, etc., be entirely prohibited.

(4) It is expected that any restrictions accepted by Canada will be equally applicable to all foreign countries, and

(5) That the present restriction of the import of U.S. Apples below "No. 1" and "Fancy" grades prior to November 15 will be extended to all foreign countries.

Australian Proposal—

(1) Elimination of plain grades.

(2) Reduction of varieties allowed for export. (Reductions from 106 to 46—this will be progressive, and further reductions will be made).

(3) Elimination of unsuitable sizes, i.e., dessert Apples not to exceed 2½ inches in diameter or to be less than 2½ inches in diameter.

Culinary Apples not to be shipped if less than 2½ inches in diameter or over 3 inches in diameter.

(4) Fruit to be carried only in refrigerated holds.

(5) Agreement to be reached with the British producers as to the time with the Australians, after which other Australian shipments should be allowed to arrive.

New Zealand Proposal—

(1) N.Z. and Australia to get together in an endeavour to decide uniform grade and size standards, which it is hoped will further stabilise quantities.

(2) N.Z. to continue to discourage further plantings of Apples for the export markets.

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(Signed) Hugh. M. Williamson, Secretary.”

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Victoria: J. B. Mills & Co., Aberdeen House, 528 Collins Street, Melbourne.

South Aust.: Messrs. Paterson & Co. Ltd., Adelaide.

West Aust.: Messrs. Paterson & Co. Ltd., Perth.

Tasmania: Messrs. H. Jones & Co. Pty. Ltd., Hobart.

(3) N.Z. to continue to exercise a strict control of grades, and to restrict shipping dates in an endeavour to avoid late arrivals.

(2) "In view of the agreement reached by this conference of English and overseas Empire delegates, this conference wholeheartedly supports the application of the National Farmers' Union for an increase of the duty on the import of foreign Apples and Pears from 4/6 to 7/- per cwt. all the year round."

Moved by Mr. W. P. Seabrook, seconded by Mr. J. E. Sandall, and carried unanimously.

4. The Necessity for Similar Grade and Variety Nomenclature for the Empire.

The following resolution was moved by Mr. W. B. Gornall, seconded by Mr. G. W. Brown, and carried unanimously—

"That this conference recommends uniform nomenclature for grade designation throughout the Empire, and recommends the adoption of the names—Extra Fancy and Fancy, as used by the United Kingdom, Canada and New Zealand, be adopted for the first two grades, and recommends the use of the blue label for Extra Fancy and a red label for Fancy."

5. Transportation.

Mr. Brown opened a discussion under this head, and full consideration was given to the various points raised, viz., shipping contract, insurance and uniformity of government certificates. The conference benefited by the presence of representatives of several shipping companies during this discussion. No resolutions were put forward under this heading.

6. Contracts for Forward Selling.

Mr. Gornall raised several points under this heading, and a full discussion followed.

The following resolution was proposed by Sir R. Eccles Snowden, seconded by Mr. Turner, and passed unanimously—

"That during the discussion on Item 6 of the Agenda several isolated instances of mis-description and wrongful shipment were reported, and this conference expressed its hope that shippers would adhere most exactly to the terms as laid out in their contracts."

7. Cold Storage in the United Kingdom.

Mr. G. W. Brown opened a very full discussion under this head, and the following resolution, proposed by Mr. Brown, seconded by Mr. Turner, was passed unanimously—

"That in the opinion of this conference it would materially assist in maintaining clearer markets if the minimum rate for cold storage could be fixed on a fortnightly rather than a monthly basis, and that the matter be referred to the Permanent Advisory Committee."

8. Standardisation of Packages.

Mr. L. F. Burrows raised a discussion concerning standardisation of packages for all Empire packers. There was a full discussion, and the following resolution proposed by Mr. Burrows, seconded by Mr. Turner, was passed—

"That all Empire countries should adopt the Canadian standard box package for Apples, the box to have the following inside measurements—11½ in. x 10½ in. x 18 in."

9. Intelligence Services.

After a full discussion, which was opened by Mr. Brown, the following resolution, moved by Mr. Turner, and seconded by Mr. Burrows, was carried—

"That in order that the work commenced by this conference be carried forward to a conclusion and possibly amplified, a committee consisting of Messrs. Brown (Australia), Dykes (Sth. Africa), Gornall (Canada), Seabrook (U.K.), and Turner (N.Z.) be appointed by this conference to examine the possibilities in this direction, and to confer with the B.E.P.O. as to the most practical method by which the Permanent Advisory Committee of the conference can be established and financed; such committee to bring down a statement for submission to the Dominions and National Farmers' Union."

10. Empire and Inter-Dominion Advertising.

On the motion of Mr. Brown, seconded by Mr. Gornall, it was decided—

"That it seemed desirable to investigate the advantages which would accrue from co-ordinating the schemes now being conducted by the Dominions and home growers with regard to advertising, and

"That the Empire Marks Committee be asked to undertake such investigation and to report its findings back to the bodies represented at the conference."

11. Inter-Dominion Trading in Apples and Pears.

On the motion of Messrs. Burrows and Turner, it was resolved—

"That this conference is of the opinion that every possible effort should be made to facilitate the free movement, other than where mutually agreed upon, of Apples between all units in the Empire and that all restrictions, other than those based upon the proven possibility of the transmission of disease or pest into a similar disease or pest-free area, be removed."

12. Consolidated Charges and Commission.

Mr. W. B. Gornall opened a discussion under this heading, and, after several opinions had been expressed by other Dominion representatives, it was moved by Mr. W. B. Gornall and seconded by Mr. Brown, and carried—"That the matter be referred back to the next conference."

REVIEW OF THE 1934 SEASON IN VICTORIA.

920,000 Cases of Apples and Pears — Pack Better, But Still Room for Improvement — The Question of Color Grading — Success With W.B.C. Pear Shipment.

(By J. M. Ward, Supt. of Horticulture, Victoria.)

WITH THE SAILING of the s.s. "Justin" on June 23 for London and Hamburg, we saw the close of another Apple and Pear export year.

During the season, some 704,832 cases of Apples, 216,257 packages of Pears, and 6,216 half-cases of Plums, were exported from Victoria to the U.K. and Continent.

These were shipped in 55 steamers, and of the quantity submitted for export, 27,821 cases of Apples, 5,993 packages of Pears, and 1,518 cases of Plums, making a total of 35,332 packages, were rejected for non-compliance with the regulations.

The

reasons for the rejections covered codlin moth infection, black spot, San Jose scale, water core, mouldy core, bitter pit, inferior sizing, bruising, over-ripeness, excess spray residue, prohibited varieties, breakages of cases, incorrect branding and other infringements of the Commerce Act Regulations.

Most of the trouble was caused by growers who pack their own fruit. It is rarely that fruit packed by co-operative and other fairly large packing houses is rejected. These packing houses, without exception, appear to do their utmost to put up a pack that is creditable to their own district and to Australia. The citrus and Pear growers have responded to a very much greater extent than the Apple growers to the instruction given by the Department in the matter of improving the pack.

It must be admitted, however, that when one reviews the situation over the past ten years

a great improvement

has been effected in the general get-up of our Apples for export; nevertheless, a still greater improvement must be brought about. To even maintain past prices, it is absolutely essential to put up a really good pack. When one looks back a few years the following facts are faced. Up to about ten years ago, Victoria had not shipped 500,000 cases in any one year, now we ship from 700,000 to over a million cases of Apples.

Ten or eleven years ago Tasmania had not shipped one million cases in one season, now she exports over three million cases a year.

A few years ago New South Wales and Queensland did not ship a case of Apples to England, now these two States send away something like 300,000 cases per annum.

Canada, South Africa, New Zealand, United States and South American

countries export greater quantities of Apples to England and Europe than they formerly did. Most growers in each State and each country are doing their utmost to ship only a good class of Apple, packed in an excellent manner. These are facts which a number of our growers have not yet realised.

Complaints have been made in connection with the lack of color on our Apples. Personally, I am somewhat surprised at this, because the majority of our Jonathans and other red varieties had good color; others unfortunately were lacking color. It is quite a common sight to see almost green Jonathans packed in the same case as highly colored fruit. Growers should avoid putting in green Apples with those of high color, as such a blend spoils the look of the whole consignment.

Many growers consider that we are particularly strict in enforcing the regulations under the Commerce Act. As a matter of fact, in view of the many adverse reports, it is apparent that we are not strict enough; or, to put it in another way, growers should not consider the regulations as something they should do or not do. Their first thought must be the buyer; he, the buyer, wants a certain class of goods, and he is not particular whether such comes from Australia or some other country; therefore it is essential to give the buyer the produce he requires, and not something we think he should have. The United Kingdom imports something like 27 million cases of Apples annually from various countries. Of this quantity some four to five million cases come from Australia. The present regulations should be looked upon as the minimum, and growers should aim for something higher, such as for instance, color grading.

Pear Export.

The bulk of the highly successful shipments came from the Shepparton district. Important factors were: (1) Harvesting at correct period (color deep green); (2) placing in cooling chamber within a few hours of picking to extract heat; (3) pre-cooling at 30 deg. F.; (4) after four days in pre-cooling chamber, fruit brought out, packed and returned to other chambers for an hour or less; (5) loading at cool night temperature, then despatch in iced trucks to Melbourne for quick loading on steamer.

Generally speaking, these Pears arrived in England in excellent condition, and realised good prices. Consequently this will encourage further shipments of W.B.C. Pears.

The heat wave in Victoria last March caused the loss of approximately 200,000 cases of export Apples. Jonathans, our chief export variety, suffered most.

Let us hope that next season will be a good one, that is, we trust that production will be at least normal, and that prices will be profitable to all concerned.

NEW ZEALAND

THE CAWTHRON INSTITUTE, N.Z.

Record of Valuable Service.

The achievements of the Cawthron Institute (at Nelson, N.Z.) were capably dealt with by Mr. T. H. Easterfield, M.A. (Director of the Institute) in the recent Thomas Cawthron Centenary Lecture. This lecture is now published in bulletin form, and a copy is just to hand from the publishers.

The lecture dealt with the institute's research work in cool storage of Apples, Peach, small fruits and Tomato Culture; Tobacco culture, Lucerne, Barley and pasture investigations; soil surveys; bush sickness investigation, plant diseases and pest control. In conclusion, it is stated: "The work of the Cawthron Institute has raised the whole level of the Nelson agricultural and fruitgrowing activities, and has given the man on the land in N.Z. an increased confidence in the application of science to agriculture."

TRADE WITH NEW ZEALAND.

Lifting of Embargo Hoped For—South Island Suffers from Shortage of Oranges—High Prices for Inferior Island Fruit.

AN EARNEST DESIRE for the lifting of the N.Z. embargo on Australian Oranges is expressed by Reilly's Central Produce Mart Ltd., in a letter to the "Fruit World" on July 5. Continuing, the firm writes:—

We are sincerely hoping that we will be able to advise our agents in Australia to the effect that very shortly the embargo has been removed. Unfortunately, we in the South are in a different position to the North Island, inasmuch as merchants in the North have direct shipments of island Oranges from the Cook Island and from Tahiti, and also they are able to land Californian fruit under much better conditions than we can in the South. For instance, the last shipment of Oranges brought forward from California by the "Monterey" was landed in Auckland, the Southern portion was railed to Wellington, and had to be sold in this town, as the seamen refused to handle fruit on coastal boats coming to the south. This meant a heavy loss to local importers, and a famine in Oranges. The island Oranges that come down here, owing to their poor keeping quality, are not satisfactory to handle, and have to be repacked immediately they arrive before we can offer them to our buyers.

The price is out of all proportion to the quality, and the public have to pay high prices for inferior fruit. There is

no doubt about it—the South Island is suffering a very grave injustice owing to this embargo, and we sincerely trust that something will be done very shortly.

Pineapples.—We are getting nice supplies of Queensland Pines per the Sydney boats.

N.Z. OPINION FAVORS RENEWED TRADE.

Embargo Partially Lifted.

The hope that the negotiations regarding the importation of Australian Citrus fruits would be satisfactorily completed at an early date was expressed by the Minister for Finance (Mr. Coates) in the House of Representatives on July 20. He said that owing to the shortage of Oranges, particularly in the South Island, the Government had decided, pending the completion with the Commonwealth Government, to allow the importation of 4,000 cases of South Australian Oranges by the steamer "Waitaki," which was due at Bluff on August 13.

HOPES FOR LIFTING OF THE N.Z. EMBARGO.

Speaking at Canberra on July 13, the Prime Minister, Mr. Lyons, said he hoped that the N.Z. embargo on Australian Citrus fruits would shortly be modified considerably.

N.Z. EMBARGO.

In reply to a question asked by Mr. Nock in the House of Representatives in mid July, the Minister for Commerce (Mr. Stewart) stated that the N.Z. Government representative had only just arrived back in the Dominion, and would probably need to consult the American Government as N.Z. could not accept the recommendations of the Canberra Conference, and still hope to secure a market for its fruits in America.

Growers should get into touch with
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And take advantage of their wide connection with importing firms in England, Canada and Europe.

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Australian Fruit Abroad

Valuable Preliminary Report by Mr. G. W. Brown

APPLE TRADE WITH U.K. AND THE CONTINENT — AUSTRALIA MUST ELIMINATE MORE VARIETIES AND REDUCE THE NUMBER OF BRANDS AND MARKS — LONG LINES OF FRUIT ARE BEST — PROBLEMS OF IRREGULAR DELIVERIES AND LARGE NUMBER OF RECEIVERS — WEIGHT OF FRUIT IN CASES.

VALUABLE INFORMATION is contained in a preliminary report from Mr. Geoffrey W. Brown, who is representing the Australian Apple and Pear Export Council in England this season. The report was sent to the chairman of the Council (Mr. J. B. Mills), and has been circulated to State associations.

A summary of Mr. Brown's report is as follows:—

It is possible to clarify the position here a little more than I have done in the past, and to put before you certain ideas which have formed in my mind in regard to the Australian trade. Please don't yet regard these as final, but the evidence generally supports them.

I shall deal with some more or less extraneous matters first:—

1.—Development of Continental Trade.

These views are generally supported by the more experienced members of the trade in England and on the Continent.

(a) **Belgium.** Owing to the recent action of New Zealand in negotiating a trade treaty with Belgium, the tariff on wrapped boxed Apples has been reduced from 172 (approx.) francs per kilo to 25 odd, and it may be possible to develop a small trade with Belgium. Belgium has a single column tariff, and consequently preferential agreements made with anyone are immediately available to everyone. The estimated requirements there are up to 10,000 a fortnight. It would be preferable at present for them to draw their supplies through London, but I shall discuss this on my return.

(b) **Hamburg.** The position in Germany is very difficult, owing to the restriction of credits available for payment overseas — this month reduced to 25 per cent. of 1929 requirements. The market is a very valuable one, and would normally take 800,000 cases per season. Direct and regular shipments are very desirable — fortnightly arrivals if possible. The considered opinion of all traders in the Fruchthof is that they do not want our less varieties—Rhymer, etc. In fact, they all definitely stated Cleos., Dunns, Jonathans and Rome Beauties, with preference for yellow varieties. They definitely prefer the Canadian box, as, in their inland trade, say, with Czechoslovakia, the tariff is on gross weight, and I saw Western Australian Apples being tipped out of the boxes into railway trucks for carriage loose in bulk into that country.

The American Apples in lighter cases went straight through and, naturally, commanded much higher prices.

Hamburg is, I think, being rather over heavily supplied this year, in view

HIGHLIGHTS OF MR. BROWN'S REPORT.

Belgium has reduced the tariff on Apples: estimated requirements 10,000 cases per fortnight.

Germany should normally take 800,000 cases of fruit from Australia and New Zealand each season. They do not want Rymers, and especially ask for Cleos., Dunns, Jonathans and Romes. Canadian box preferred.

To export to Sweden stocks must be cleared before May 1 to avoid the excess tariff. Efforts are being made to extend the low tariff period, as this will not harm local growers. The normal requirements are 180,000 cases per annum from Australia and New Zealand.

Contributory factors to low prices this season were,—early fruit immature and pitted; definite lack of purchasing power in U.K.; carry-over of American fruit. Australia must improve her marketing methods, and concentrate on main ports and principal receivers, reduce varieties, also brands and marks.

The problem of irregular arrivals is exceedingly difficult, but it has to be solved.

Australia must supply full weight in cases.

After detailing our problems and possibilities, Mr. Brown concludes on a high note of confidence, — that in attending to necessary improvements we can retain our markets abroad.

of their difficult financial position, and it is probable that Apples may find their way back on the London market for sale, even in spite of their having to pay duty here.

The growth of Rotterdam as a market is jealously watched, about 85 per cent. of the fruit sold in Rotterdam being consumed in Germany or beyond. It is considered possible that the German Government may take action to ensure that fruit destined for consumption in Germany should be handled in German ports—a not unreasonable attitude.

The development of direct trading to Scandinavian and other ports is a little illusory. It may appear to be providing new markets, as it has indeed done to some extent in Sweden, but really it seems that most of it has been at the expense of the natural entrepot ports, Hamburg, Hull and London. I shall touch on this matter again in this report. The Hamburg market is very efficiently organised, and in the hands of excellent firms. There appeared to be a definite feeling of goodwill towards Australian trade, with a very politely expressed hope that more trade from Germany to Australia would be possible in the future.

The development of Bremen as a market for Australian trade would not be open to the objection that it was taking entirely from the Hamburg markets if the quantities were strictly limited, as Bremen does a little more easily supply the industrial Rhine area.

(c) **Sweden.** As the "Port Bowen" was taking approximately 100,000 cases of Apples into Sweden, I took the opportunity to travel with the cargo and inspect the fruit and to try to get an insight into the market there. A curious position has arisen. Under a trade agreement, the heavy tariff on imported Apples is halved in February, March and April, and it is necessary that our Apples should be cleared by May 1 if we are to use that market. I have strongly urged that another month, or even two, could be allowed without the lower tariff jeopardising the position of the Swedish grower in any way, and I went to Sweden to get the views of the trade on this matter. There is no organisation there which could present the views of the local growers, but the traders unanimously expressed the views that the extension of the low tariff period to the end of May would not affect the local growers at all, but would very materially assist the trade in Sweden.

I have represented this view to Australia House, and hope that action now being taken will achieve the desired re-

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No Other Brokers and Auctioneers Selling in the "Fruchthof"

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sult. It is as well to remember in this connection that Sweden has a favorable trade balance with Australia, and this can further be helped by our continued use of Swedish wrapping paper and woodwool, and the use of Swedish cases instead of American, whichever we are forced to buy outside the Empire.

The Swedish normal requirements would be about 180,000 cases from Australia and New Zealand. There is no consignment business there, and my own impression of the market is that it should be fed by direct shipment to about half its known capacity, say, two ships of 45,000 to 50,000 each, one arriving late in April and one late in May, and allowed to draw on Hamburg, London or Hull for the remainder of its requirements. It is a market which would immediately collapse if over-supplied. The trade there prefers Cleos. and Dunns, and would like good Jons. They would like Granny Smiths, but probably would not pay the margin now obtainable in England.

The cargo carried by the "Port Bowen" was carried in an exemplary manner, very well stowed and dunnaged, and I think without a single damaged box, and though showing bitter pit very badly, turned out, as far as cool storage went, in excellent condition.

It seems to be the opinion of several traders in London that there is in Poland a market capable of fair development. This would have to be explored from London to begin with.

These rather general statements on Continental markets may be summarised as follows:—

A Profitable Sideline.

Good money is to be earned in the country by the snaring of water rats. Farmers and others living near rivers, swamps or large dams will have no trouble in seeing traces of these little animals, the skins of which are much sought after by manufacturing furriers to-day. They bring high prices right through the year.

Water rats frequent old rabbit burrows. Many ways have been devised in trapping. The jam tin snare is one of the best; make a cross-cut at the top of a jam tin and press the four corners in; place a piece of meat inside the tin; the tin should then be wired and pinned to the ground. When the rat pokes its head in to get at the meat the points of the four corners which have been pressed in prevent it from withdrawing its head. The method of skinning and drying should be the same as a rabbit, that is it should be gloved. Never cut up the belly, as this method is not correct, and lowers the value of your skins. Snares may be set in the afternoon, and visited to take the catch in the early hours of the morning.

Care should be taken to see that the skins are thoroughly dried before packing for transit or storing, otherwise they may arrive in a damaged condition.

Messrs. SLATTER & CO., of Nicholas Building, Swanston Street, Melbourne, will purchase these skins in any quantity, and pay top market price. On receipt of a parcel, they grade the pelts, and forward you a cheque by return mail. This firm are also buyers of other skins, and will always be pleased to receive consignments of same from the country.

(1) The development of apparently new Continental ports, though it may, and does, slightly increase consumption in new areas, does not achieve a great deal, as buyers are drawn from the established markets to their detriment. It is necessary to have, as well as a consuming population to feed, and an efficient and cheap sea board port, an efficient sales organisation wherever we sell fruit. If we deflect from one point to another, our competitors very quickly supply the deficiency wherever their sales organisation has been developed.

(2) The feeling is generally strongly expressed that preference will be given to the fruit of that country which is prepared to trade with the recipient of its fruit.

(3) Racial and national feeling must be respected, and if a country wants the fruit for its own consumption by direct shipment it is desirable to arrange that.

(4) Tariffs must be scrupulously watched and examined, and our views constantly kept before those making any representations about them.

(5) The market must be consulted and given what it wants.

(6) Regular shipments are essential.

The British Market—Apples.

(a) Conditions This Year. So far, prices have been very disappointing, and I shall try to deal with what I believe to be contributory causes.

(i.) The early fruit arriving was of poor quality — very immature, and in most cases showing bitter pit badly. I attended the official opening of the season at Liverpool, and had the utmost difficulty in finding any cases suitable to exhibit. Fruit is still lacking in color, with notable exceptions.

(ii.) Definitely there is still a serious lack of purchasing power here. The public is not buying, and cannot buy in very large quantities at high prices.

(iii.) The carry-over of American Winesaps (mainly) has been heavy. They are still on the market, and are very well colored and very well packed. The Apple is of poor quality, but next year it may be that Newtowns are plentiful, which will be even more serious.

(iv.) Our marketing methods leave a tremendous lot to be desired.

(a) Forward sales to legitimate traders are reasonable, but forward sales, fruit on guaranteed advance, etc., to crowds of small traders, and even to those who have no real connection with the fruit trade are disastrous. I know of cases where small retailers opposite the Spitalfields markets have received direct shipments — part consigned, part bought, and these men have been standing outside the auction rooms offering buyers small parcels at 6d. under auction prices before the auction. This, of course, is hopeless, and we must devise some means of limiting the receipt of

fruit to responsible people here. These remarks would apply equally to fruit consigned to such receivers.

(b) When trade is good, buyers will accept conditions that they will not accept under other conditions. The enormous number of brands or marks, the difficulty of buying in lines, and the cost entailed in sorting are increasingly detrimental in a bad market. These apply also to the large number of varieties, and the consequent small lines available.

(c) The lack of regularity in arrivals, e.g., Hull received recently three ships in one day. The market dropped about 1/- in Hull, and this was immediately reflected in all markets. **THE PROBLEM OF ARRIVALS IS TERRIBLY DIFFICULT, BUT IT HAS TO BE SOLVED;** that is the considered opinion of the trade here. Buyers can buy from America, long lines, if they like 1,000 of one count, and one brand, and arrival on a specified date is almost automatic.

I am really afraid that unless action is taken to remedy these matters the trade will definitely be lost. One very prominent receiver in Spitalfields has told me that he considers that the "2,000,000 best" of the Australian fruit is all that is saleable at decent prices—the rest should be kept at home.

This is an extreme view, not generally accepted, but it followed a discussion in which the above points were mentioned.

(To be continued next month.)

Classified Advertisement.

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Tasmanian Fruit Industry

New Organisation Proposed to Replace State Fruit Advisory Board—Voting Proposed on Compulsory Basis.

Federal Assistance of 1/6 Per Case to be Sought.

EARLY IN JULY a deputation from the Huon Municipal Association asked the Premier, Mr. A. G. Ogilvie, K.C., that the Federal Government guarantee a price of 4/6 per case f.o.b. Hobart for fruit shipped overseas, that the Federal Government should be asked for a bonus of 1/- a case on all fruit shipped overseas this season, and that steps should be taken to bring about a reduction of freight next season.

The Premier convened a conference and issued an invitation to several prominent growers and representatives of the growers' organisations to discuss

the position of the industry. He invited discussion as to whether the industry should unite voluntarily or compulsorily, but did not favor suggestions that would bolster up the inefficient orchardist.

The conference was duly held, and sat in camera; Warden A. Davies presided; delegates were also present, Messrs. Neil Campbell, M.H.A., B. J. Pearsall, M.H.A., G. C. Frankcomb, E. Burgess, W. H. Calvert, M.L.C., and D. E. Ryan, R. H. Thompson, B. Plummer, C. L. Medwin, F. M. Nicholl, J. H. Astell, C. W. Frost, and P. H. Thomas (Chief Horticulturist).

A Growers' Board.

The chairman (Mr. Davies) informed the Premier that the following resolution had been unanimously agreed to by conference:—

That the time is opportune for the appointment of a Fruit Board elected on a compulsory basis; the board to consist of growers to be elected as a fruitgrowers' representative body, with the Minister for Agriculture as its head; the board to advise the Minister regarding the best methods of regulating and controlling the fruit industry of Tasmania; that the present fruit districts defined under the constitution of the State Fruit Advisory Board, be adhered to, i.e., that there shall be nine districts, six in the South and three in the North, each

of which shall have one representative on the board; that the voting shall be on the basis of one vote to each bona-fide orchardist, the qualification to consist of the ownership of at least two acres of orchard.

Government Assistance.

It was decided to ask the State Government to impress upon the Federal Government the desirability of reimbursing all growers who exported Apples overseas during the 1934 season to the extent of 1/6 a case, in view of the heavy freights; further, that the Federal Government be asked to use its influence to secure a reduction on freight rates on Apples exported overseas, failing which a subsidy of 1/6 a case be made available by the Commonwealth on all Apples exported during the 1935 season, as in existing marketing conditions growers would not be disposed to ship fruit to overseas markets.

It was also decided to endorse the proposal of the State Fruit Advisory Board for a Trade Commissioner to look after the interests of Tasmanian fruitgrowers on the British market.

Classified Advertisement.

WANTED. — 1,000 cuttings Granny Smith for grafts from fruiting trees. Price on rail, CAMPBELL, Kilsyth.

APPLE TREE CENSUS.

The Tasmanian State Fruit Advisory Board has issued a comprehensive questionnaire seeking information as to the acreage, varieties and quantities shipped

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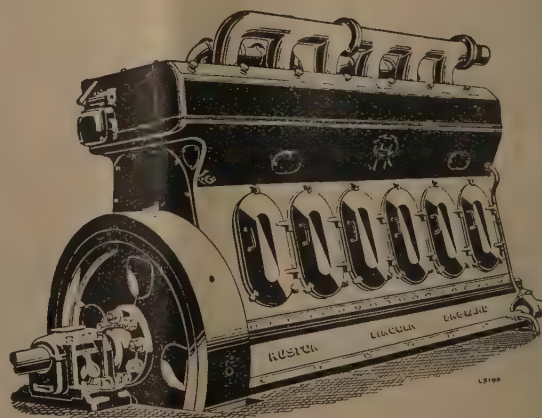
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overseas and Interstate. Information is also sought as to the number of trees under seven years, those seven to 14 years, those 15 years and over. Twenty-six varieties are named for which this information is desired.

By giving the desired particulars a valuable record should be obtained.

APPLE AND PEAR EXORTS.

Federal Assistance Needed for Growers.

Information regarding Apple and Pear exports is to hand from Mr. H. G. Colombie, Melbourne. The summary of his remarks being as follows:—

Although Apples show a reduction of 750,000 cases on last year,—being 4,850,000 cases in 1934, as against 5,600,000 in 1933—this year's market results show little improvement on 1933. Pear prices, however, show a substantial improvement.

This year's Apple exports to U.K. only totalled 3,700,000 cases, against 5,000,000 in 1933, and to the Continent 1,150,000 cases against 600,000 in 1933, thus showing a decrease for U.K. of 1,300,000, whilst quantities to the Continent were nearly double. Pear exports were about 365,000 cases in 1934 against 620,000 in 1933. The general U.K. all-round average for Apples shows a slight improvement, but results again leave owners with a loss. Pears show a good profit. The slight improvement in Britain is nearly offset by the lower prices on the Continent.

The purchasing power of the British public has reached a level of values which must now apparently be taken as the general economic level.

Federal Government assistance would be welcomed, but before formulating the conditions the Government would do well to secure the views of the leaders of the industry. Many deserving growers received no part of the 1933 grant.

It would seem that the best remedy would be for the Australian Government to follow the Government of New Zealand in guaranteeing a given figure to exporters, according to varieties and grades, and treat Apple exporters in the same manner as they are now treating Orange exporters.

FEDERAL GOVERNMENT BUDGET.

The Prime Minister and Treasurer (Mr. Lyons) has issued his comprehensive budget, setting out the financial programme for the year.

The following have been freed from imposition of Sales Tax:—

Greftex, for use in grafting. Pruning shears, pruning saws, pruning knives, pruning hoops, pruning hoops and saws, tree pruners and branch shears. Wire fruit-cleansing baskets.

Materials having similar uses to sisal-kraft, which is already exempt. Spray-painting materials for use in the industry.

Cold Storage In Australasia

COOL STORAGE AND FRUIT TRANSPORT.

At a meeting of the Melbourne University Agricultural Society, held on June 29, Mr. G. B. Tindale, B.Agr.Sc., gave an address on Cool Storage and Transport of Fruit. The address mostly took the form of a series of slides illustrating the results of fruit respiration experiments. These were designed to determine (by the daily measure of the carbon dioxide output from the individual fruits) the storage life of the various varieties of fruits stored. So far, the work has been mostly with Pears, but investigations were to be conducted with other fruits as well.

Dr. Trout and Mr. Tindale hope to publish shortly the results of their Pear work. The results of their work with other fruits is as yet incomplete, and Mr. Tindale states that they feel that the results so far obtained must be verified before being presented for publication.

COOL STORE AT GRIFFITH.

Further evidence of the growth of co-operative effort amongst fruit growers is evinced by the latest development at Griffith. An up-to-date cool store and pre-cooling plant is being installed on the premises of the Griffith Producers' Co-operative Company Limited, at Griffith, M.I.A. Space is being provided for 10,000 bushels with six rooms all furnished with direct expansion air circulation equipment.

The plant is designed to cope with the rapid cooling of summer fruit, which will involve the reduction in temperature from 90 deg. F. to 35 deg. F. in 24 hours of at least 125 tons of canning Peaches. Hitherto heavy losses have occurred during heat waves owing to the fruit ripening at a rate beyond the capacity of the Sydney canning factories to cope with it. Hot fruit sent to Sydney has been proved to ripen so rapidly in transit that it is not in satisfactory condition to hold in cool stores there. Hence the exceptionally large cooling capacity of this plant which is designed to quickly arrest ripening within a few hours after picking.

The power plant will consist of one 50 h.p. and one 105 h.p. heavy duty Diesel engine driving a 25 ton and a 45 ton compressor respectively.

When the pre-cooling season is past the plant will be run as an ordinary cold storage when only the smaller unit will be in service. All rooms will be fitted with electric thermometers, which will indicate in the engine room.

The building, which will cover an area of 150 feet x 45 feet, is of steel construction throughout. No brick or concrete walls are provided, the entire shell being steel framed with panels of cement and cork to a thickness of 8 in. to 12 in.

The work is being carried out by Messrs. Werner & Company Ltd., of Melbourne, at a cost of approximately £10,500 to provide which additional share capital is being subscribed by the present shareholders in the co-operative company.

CARBON DIOXIDE FOR FRUIT TRANSPORT.

Remarkable Success in Checking Transit and Fungus Rots.

Precooling and Use of Solid Carbon Dioxide Now Largely Adopted in U.S.A.

BECAUSE OF THE DAMAGE caused by transit and fungus rots in fruit, tests have been conducted in U.S.A. with carbon dioxide, and these have proved highly successful. The U.S. Department of Agriculture predicts that the use of carbon dioxide in refrigerated fruit cars is likely to become a common practice.

A perusal of American files reveals the interest which is being displayed in this matter. "Ice and Refrigeration" for June, 1934, states that the use of carbon dioxide would decrease substantially the present annual loss of many millions of dollars from rots and other diseases developing in the fruit during shipment.

Transit disease specialists have found that in experimental shipments the greatest development of transit diseases occurs within the first twenty-four hours after the fruit is loaded in cars, and that precooling the fruit in cold storage or by other methods stops most of this early disease development, and have discovered that treating the fruit in the cars with carbon dioxide gas has practically the same effect on disease organisms as precooling.

The success of the experiments is regarded as highly significant for many of

(Continued on page 410.)

Apple Trees — Their Nitrogen Supply

Interesting Experiments in Western Australia

VALUABLE INFORMATION on the subject of nitrogen supplies for orchards was recently given in a broadcast address over 6WF, by Dr. L. J. H. Teakle, of the Western Australian Dept. of Agriculture.

A summary of the address is as follows:—

* * *

Nitrogen is one of the elements indispensable for the growth of plants. It is also an essential component of proteins, the flesh-forming constituents of human bodies.

A pint of milk contains about $\frac{1}{4}$ oz. nitrogen present in the form of protein. A large Apple has one hundredth of an ounce of nitrogen.

Nitrogen on the Orchard.

Interesting tests were carried out at the orchard of Mr. R. Cross, Argyle, W.A., where the soil types are:—

First: A deep alluvial soil along the Preston River banks, and

Second: A shallower soil associated with two creeks forming an alluvial fan between the first type, the river alluvium, and the rough jarrah hills.

In both types of soil good results are secured. The trees on the deep alluvial soil are the more mature. On the second soil type the trees are younger and are very vigorous.

Experiments were commenced in January, 1933, and completed in January, 1934. Samples were taken monthly, and the available nitrogen extracted. Over 600 soil samples were analysed.

"What is soil?" asked Dr. Teakle, and then answers the question as follows:—

The soil is a living system in a constant state of flux.

The mineral matter provides the framework and certain essential elements for nutrition, the organic matter, the residues of the dead bodies of ani-

mals and plants, provides the food for the countless millions of micro-organisms, which inhabit the soil and render these residues available for the manufacture of food for the next generation of plants and animals.

In general, the micro-organisms are most active in spring and summer, and least active in winter. Thus, they are most actively preparing available nitrogen for the Apple trees when the heaviest demands are being made, and, during the period of dormancy and winter leaching, are taking a well-earned rest. The orchardist must ensure the provision of food supplies for these friendly organisms, and must maintain the soil in a suitable condition for their proper development. This is accomplished largely by cultivation to render the soil in a suitable physical condition, and by the growth of cover crops to maintain the necessary organic matter.

There are three main groups of micro-organisms:—

First—A group of nomadic nitrogen fixing organisms consuming the soil organic matter, and at the same time absorbing nitrogen gas from the air and building it into their bodies. Their urban cousins, living in tubercles on the roots of leguminous plants, would be performing a similar function: the soil is thereby enriched with nitrogen.

Second—The scavenger group or putrefactive organisms, which are concerned with the decay of organic residues. One end-product is ammonia, itself valuable as a source of nitrogen for plants, but which is usually the forerunner of nitrate, the most common form of nitrogen absorbed by ordinary plants. Incidentally, the dead bodies of the nomadic nitrogen fixers and the residues of the leguminous plants are decomposed by these organisms and the new supply of nitrogen finds its way

into the available nitrogen fraction.

Third—A most interesting group are the tiny nitrifying bacteria which change the ammonia into nitrate, as rapidly as it is formed. These bacteria use the energy from the oxidation of ammonia, just as green plants use sunlight, and animals and most micro-organisms, use organic matter as the energy source for their living processes.

The importance of legumes for cover crops cannot be over-emphasised, as the legume provides a means of augmenting the nitrogen supplies of the soil by fixation of atmospheric nitrogen.

American, as well as English experience show that, by proper management with respect to cover crops and cultivation, the available nitrogen supply in the soils of Apple orchards can be maintained at an adequate level without the use of nitrogenous fertilisers, at least for many years.

Mr. Cross, in his orchard management, makes use of a winter cover crop, and cultivates adequately in the spring and summer months. In addition, he is liberal in the use of sulphate of ammonia as a supplementary supply of nitrogen, both in the autumn and spring periods, for the more mature and heavier bearing trees on the deep alluvial soil. During the year 1933, he applied two cwt. in the latter part of April, and three cwt. some time prior to the sampling on November 8.

Throughout the investigation, the nitrate nitrogen figures are based on the surface soil to a depth of thirty inches, and for sake of simplicity are calculated in terms of pounds of sulphate of ammonia per acre.

The results show that the available nitrogen content is high in the summer and low in the winter months. During the winter months the soil appears to reach a relatively constant minimum with respect to available nitrogen, the figure being equivalent to from 50 to 100 pounds of sulphate of ammonia per acre.

To be Continued.

COLD STORAGE

(Continued from page 409.)

the fruit shippers of the country, especially for those who must rush their crop to market, or for those who cannot make use of precooling facilities and ship most of their fruit directly after loading.

The principal advantage of the gas method is not that it will replace present precooling practices, but that it will give the advantages of precooling to shippers to whom refrigerating equipment is not available.

The carbon dioxide treatment is simple, and has several outstanding advantages. The fruit is treated by placing small quantities of solid carbon dioxide over the load or in the ice bunkers in addition to the ordinary icing.

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The "Fireblight" Embargo.

Vigorous Discussion at N.S.W. Fruitgrowers' Conference.

Dr. Noble States Danger Negligible of Introducing Fireblight on Apples.

THE SUBJECT OF EMBARGOES on fruits as affecting Australia and New Zealand, came up for vigorous discussion at the recent annual conference of the Fruitgrowers' Federation of N.S.W.

It was apparent that the conference was divided on the subject.

On the one hand were the Citrus growers, who felt that the refusal of N.Z. to accept Australian fruit was primarily due to the action of Australia in refusing to accept Apples from New Zealand.

In fact the Federal Minister for Commerce (Mr. Stewart) had plainly indicated this at the N.S.W. conference the previous year.

On the other hand, were the Apple and Pear growers, who felt that the danger of the introduction of Fireblight on fruit from New Zealand must be avoided at all costs.

The debate commenced when Mr. F. B. McKenzie (Kurrajong) moved—

"That conference expresses its appreciation to the board of the Federation and to the Minister for Commerce for the work done to secure the lifting of the embargo, and urges also that every effort be continued in order to regain the New Zealand market."

Mr. A. E. Herring proposed the addition of the words "without involving the introduction of N.Z. Apples owing to danger of Fireblight."

Dr. R. J. Noble, Biologist, Department of Agriculture, gave a detailed statement of the scientific aspects involved.

A summary of Dr. Noble's address is as follows:—

At the outset he indicated that he had no illusions about Fireblight — it was a very serious disease. Enormous losses were experienced in U.S.A. and in Canada each year, as indicated by the fact that in the United States alone the annual loss was estimated at upwards of two million bushels of Apples and two million bushels of Pears. Much more serious, also, was the damage caused by cankers and subsequent destruction of limbs, and frequently, also, in Pears, the total destruction of the trees.

The bacterial nature of the disease was determined only during the latter part of last century, and it is now known

that it has been present in the United States for more than 150 years.

The disease was first discovered in New Zealand in 1919, and it is believed to have been introduced in nursery stock received from the United States. Stringent measures for eradication of the disease in New Zealand were not instituted immediately, and the disease subsequently gained a footing in other portions of the Dominion.

Plant pathologists generally are agreed that most plant diseases have been distributed originally by means of seeds, plants and plant parts which are suitable for propagation. Very serious risks of introduction of diseases from abroad have been incurred in this way, and plant quarantine authorities have instituted very drastic regulations in an endeavour to remove such risks in respect of certain diseases which have not yet become established in Australia.

Dr. Noble said he had had the opportunity of spending three summer periods in various sections of the United States some 12 years ago, and, as opportunity offered, discussed various aspects of plant quarantine measures with specialists in that country. In view of the outbreak of Fireblight in New Zealand in 1919, this disease was discussed in some detail. A great deal of work on the problem has been completed since that time, and very much more information on the disease is now available.

Climatic conditions in the spring have a very important bearing on the distribution of the trouble, just as they have in respect of so many other diseases which are of vital concern to fruit-growers. One cannot escape the conclusion that if the disease were properly established in pome fruit-growing areas in which there were moist periods in the spring, it would not fail to develop, and would be particularly serious on Pears. It is generally accepted that the disease could develop in Europe, but, although specialists from America have sought for the occurrence of the disease in England, and English plant pathologists have been constantly watching for any sign of its development, there is, as yet, no record of the disease in that country.

Apples from Fireblight countries have been imported into England for many years past, and the total importations are now in the vicinity of five million cwt. per annum. If there had been

risk of introduction of the disease into England by this means it is considered that there would have been ample opportunity for the disease to have become established in England many years ago. One cannot escape the inference that it is most unlikely that the disease ever will be introduced by this means.

Knowing something of the frailties of human nature, some plant pathologists are of the opinion that eventually all plant diseases will be distributed throughout the world, and will become established in those areas which are climatically and otherwise suitable for them.

Most plant pathologists are agreed, however, that legitimate plant quarantine measures will tend to delay the introduction and establishment of such diseases, and are therefore justifiable. If we were to take extreme precautions in respect of these possibilities all international trade and movement would have to cease. This statement is not as absurd as it might appear at first sight, for it is well known that plant materials are introduced from overseas by persons either thoughtlessly or by design, and inspection services cannot be expected to eliminate entirely this source of possible introduction of new diseases.

In the early history of Federal plant quarantine regulations against the introduction of Fireblight, almost complete embargoes were placed on the introduction of plants and certain seeds from New Zealand. These have been modified from time to time as new facts became available.

In a general discussion of plant quarantine measures in an article published in the *Agricultural Gazette* of N.S.W. in 1924, Dr. Noble stressed the necessity for the establishment of a group of plant specialists, who could be called upon for advice as to the action which was desirable in respect of measures applicable to Australian conditions. He also read the following quotations from this article:—

"That it should be the function of such an advisory body to safeguard the ultimate welfare of the whole community by such restrictive measures as are calculated to prevent the introduction of new diseases, but taking cognisance of all the facts available, it does not at the same time impose undue restrictions on ordinary trade requirements. This statement is made in view of the fact that sometimes there is a tendency to use the principle of exclusion on biological grounds as a cloak for economic protection, which perhaps is not always justified on its own merits."

The question of Fireblight introduction was discussed on that occasion, and the suggestions which he then made

have since been reaffirmed at the recent conference of plant specialists held at Canberra.

In all such matters decisions must be made on the basis of the biological facts of the situation, and it is to be recollected that if other countries, in whose service there are reputable technical advisers, consider that the facts are not properly interpreted, then serious repercussions are likely to occur.

In conclusion, the whole question is one of assessment of risk, and the responsibility lies with those who are in a position to interpret the facts at their disposal.

As indicated recently in the press, the plant pathologists in conference at Canberra last June carried the following resolution:—

"That importation of Apples by the Commonwealth from New Zealand be subject to certification by the Department of Agriculture in New Zealand that the fruit has been derived from uninfected orchards, and that importation involves no practical risk."

This resolution referred only to Apple fruits, the maintenance of an embargo on stocks was advised; such decisions were considered to be in closer agreement with the facts of the situation than is indicated by the regulations which, at the moment, are still in force.

Summed up, Dr. Noble's viewpoint was that he and his fellow plant pathologists who met at Canberra were convinced that there was no practical danger of the introduction of Fireblight on the importation of Apples from New Zealand.

In answer to a question, he stated that if he were a fruitgrower he would have no fear of receiving on his orchard Apples from a Fireblight district. It was a blossom disease affecting the fruit and was not carried on spurs. Scientists after due deliberation had recommended that the importation of Apples be permitted from N.Z. from districts free of Fireblight. Thus, the embargo would remain on Apples from Fireblight districts, on all Pears from New Zealand, together with a total prohibition of nursery stock and plants susceptible to the disease. There was not one chance in ten million of Fireblight being introduced on Apples.

Mr. Wilson Moses (Griffith) maintained that the Government should not take the opinions of growers on such a technical matter. It was eminently a question for scientists. He appealed to delegates to regard the question from a national viewpoint.

Mr. C. Buchele (Batlow), speaking with considerable feeling, urged that if any risk at all were involved the only safe course was to maintain the embargo.

Delegates from other Apple and Pear growing districts supported this view.

Mr. McKenzie declared that the decision of unbiased scientists who had spent their lifetime in studying plant diseases should receive proper consideration. Delegates had cross-examined Dr. Noble for two hours, and had been unable to shake him in his views.

The amendment was put and lost, and the original motion was carried by a large majority.

Western Australia.

Pruning Demonstrations Appreciated—Is Restricted Production Desirable?—Improving the Packs—Better Overseas Carriage Desired.

INTERESTING COMMENTS on current items of interest to fruitgrowers are to hand from Mr. Gus. Sharp, a well-known fruitgrower of Donnybrook, W.A., as follows:—

Up to June 20, Apple trees were in full foliage, and until the recent frost, quite green. It will be interesting to note how the short period of dormancy affects following crop.

Growers are showing keen appreciation of the pruning demonstrations directed by Superintendent Wickens.

Naturally, the problems chiefly exercising the minds of growers at present are:—Increasing production and meeting languishing markets. No solution has so far been advanced, and the position, both overseas and locally, is causing much perturbation.

It is all very well to call restricted production a "policy of despair," but there are easier ways of losing money than producing crops which cannot be sold at a profit, and greater despair is likely to follow. The only suggestion thus far offered appears to be a more attractive container with dressed sides and fancy labels, but I think buyers would show more interest in better quality contents. Lower marketing costs are imperative, but we must put our own house in order in regard to quality and pack.

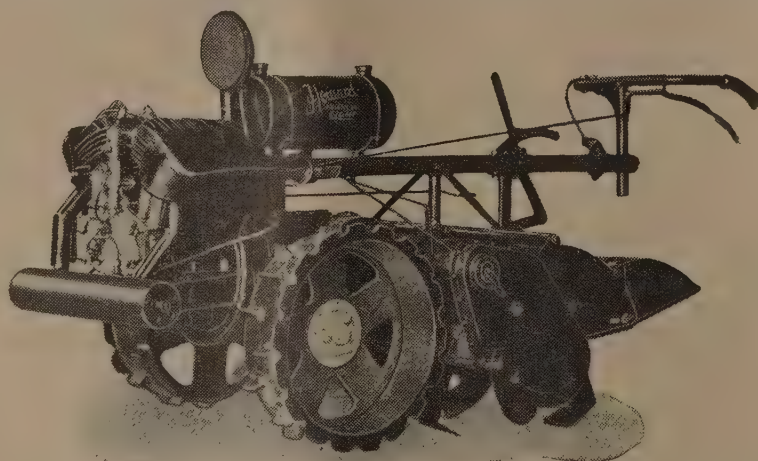
District inspection of export fruit would, in my opinion, be much more effective in determining the quality and condition before shipping. It is very evident, however, that storage conditions in the insulated chambers of some of the boats compares very unfavorably with those obtaining in the average packing shed during summer months.

Advices are to hand from Mr. G. W. Wickens, State Supervising Officer, showing that in the 1934 season the export of fruit from W.A. totalled 702,795 cases. These included:—Apples, 618,234 cases; Grapes, 46,307; Pears, 33,788; Oranges, 3,860; Plums, 248; with smaller quantities of Quinces, Peaches, Nectarines, Passion-fruit and Tomatoes. In addition to exports, to U.K. and the Continent substantial quantities went forward to the Near East.

DEFERRED DUTY ON TINPLATE.

The Minister for Customs has decided to further postpone the operation of the deferred duty under Tariff Item 147 until January 1, 1935.

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The Manuring of Vines

Effects of Nitrogen, Phosphates and Potash.

(By A. V. Lyon, M.Ag.Sc., Commonwealth Research Station, Merbein.)

VINE MANURING is a much discussed subject among vignerons. The following hints from Mr. A. V. Lyon, M.Ag.Sc., of Merbein, will be found of interest.

1. General.

Recommendations in reference to the manuring of vines are based mainly on the general principles of plant nutrition. Few experiments with results of statistical significance have been secured from vineyard plots, the chief difficulty being the very high variability of the individual or plot yield occurring in Grape vines. The variation is partly due to environmental differences, but is also undoubtedly associated with pruning practices. On old vineyards, it is extremely difficult to maintain similar growth and yield even on adjoining vines or plots. The failure to secure definite experimental results does not mean that fertilisers are not of value. It simply means that at present the investigations have failed to overcome the difficulties associated with work of this nature.

2. Experimental Results in the River Murray Areas.

Several important points have been established. For instance, a marked relation has been shown between the annual growth on the bearing wood of the vine and the yield and quality of the Grapes. Higher yields and better fruit are found on spurs or on rods which produce the greatest length of annual wood. For example, the big shoots arising from the spurs on the Zante Currant invariably produce the best bunches. Similarly the Sultana cane producing the greatest quantity of growth also produces the highest yield and the best fruit.

Measurements of this nature, applied to vines receiving varying quantities of different fertilisers, have given certain results of significance in plots established at Red Cliffs. The vines receiving nitrogen (in this case as sulphate of ammonia) results in 20 to 30 per cent. more fruit. So it can be said that, in cases where a growth response results from the nitrogenous fertilisers, an increased yield also results. No measurable increase could be noted from applications of a purely phosphate fertiliser (in this case in the form of superphosphate). It is certain, however, that superphosphate is of value. It has an indirect effect in promoting the growth of cover crops, which are accepted to

be of value in increasing the necessary humus to the soil. Cover crops sown without superphosphate are usually unsatisfactory, and vineyards in which cover crops are not satisfactorily produced or are not grown at all, ultimately produce stunted growth and low yields. So superphosphate has a definite place in routine fertiliser applications on vineyards.

The effect of applications of potash are so far rather obscure. Again, this does not indicate that potash is of no

value. We prefer to think that so far we have not been able to properly exploit the possibilities, or determine the reactions.

3. Quantities.

The results have not been sufficiently conclusive to discuss "costing." Two cwt. of sulphate of ammonia per acre increased the yield of Sultanas significantly, and an additional 2 cwt. gave further increases, though not proportional to the increased quantity. A dressing of approximately 2 cwt. of sulphate of ammonia per acre, or its equivalent, represents the average applications of a number of progressive growers. Superphosphate dressings, applied when the cover crops are sown, usually varies from 2 to 4 cwt. per acre.

There is little agreement among growers respecting the use of potash, or in the amount of the dressing where it is applied.



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Thus:—

IRRIGATION AREAS:

4:4:1 4-8 lbs.
per tree
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COASTAL AREAS:

2:2:1 4-8 lbs.
per tree

If Potash is not desired, use
1:1 Super and Ammonia)

These Mixtures are obtainable from
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ALL AGENTS

H3/34

Manuring Fruit Trees

Seasonable Hints.

WHAT IS THE BEST all-round manurial treatment for fruit trees is still, unfortunately, a debatable subject, but there is one application about the need for which there can be little doubt. It concerns the necessity, in most soils, for some readily available nitrogen as supplied by sulphate of ammonia, in the early spring. There should be no difficulty whatever in grasping this simple idea. From the time that the roots commence activity, until the fruit has set, all trees and vines make a heavy demand on the available nitrogen in the soil. And yet, during the first half of this period, the soil's natural content of nitrogen is extremely low, no matter how much nitrogen or whatever kind was applied the previous year. The chief reasons for such impoverishment are twofold:—

1. Whatever available nitrogen there was in the soil in the autumn existed in the nitrate form, and was mostly leached down below the root zone by the winter rain and irrigation water.
2. Any organic or slowly available nitrogen remaining from the previous season, or applied during the winter, and almost certainly any that was applied late, has not yet been made available to any extent, as the soil temperature is still too low to permit of sufficient soil bacterial activity.

There then is a straight-forward problem to solve. What is required is some form of nitrogen which is itself immediately available to plants without the intervention of soil organisms and yet a form which the soil particles will hold against the leaching effect of water. Preferably, of course, such a form should be the cheapest of all those suitable for the purpose. Further, it should be free, friable and convenient to apply and, finally, should, if possible, be a kind which will mix readily with super and potash, as it is most convenient to make one application of all three essentials at this critical period.

Sulphate of ammonia is the only form of nitrogen which complies with all these specifications—and above all, it is the cheapest form procurable. Remember that fertilisers are bought for the plant food which they contain and therefore the price per ton of fertiliser means little unless its content of plant food is taken into consideration. It is only the price per unit of plant food that counts. The unit usually chosen for purposes of comparison is that represented by 1 per cent. or one part in every 100 parts of the fertiliser. For instance, as sulphate of ammonia contains 20.6 per cent. of nitrogen and costs £12/2/- for cash f.o.r. Melbourne, then the cost of

every one part per 100 or 1 per cent. per ton is the price divided by the analysis—£12/2/- divided by 20.6—namely 11/9 approx. Before comparing the cost of any other fertiliser containing nitrogen, no matter how much lower its price per ton may be, this same calculation must be made.

If then, owing perhaps to financial stringency, you give no other manurial assistance to your trees or vines, do not fail to give them at least a little sulphate of ammonia in the spring. Moderate applications of sulphate of ammonia at this time, especially if applied with super. and potash, will do nothing but good. Neither will the quality of the fruit be affected, nor will any fungous diseases be unduly magnified by such treatment. On the contrary, more fruit will be set and developed to desirable size and color, and the trees or vines, being healthy, will resist to a greater degree dry weather, frost, wind, heat waves and pests of every kind.

Apply from 2 to 6 lbs. of sulphate of ammonia per tree, or cwts. per acre, according to the size and condition of the tree and its past vegetative vigor. Citrus trees and Pears for fresh fruit or canning may be given more than Peaches or Apples. Apricots and vines require moderate amounts. To apply sulphate of ammonia alone every spring is not recommended, not because it itself will be harmful, but because orchard trees also require some phosphate and, in many cases, potash as well. So far as we know up to the present, the ideal mixtures for fruit trees under average conditions are these—the 2:2:1 for light coastal soils and the 4:4:1 or 1:1 super. and ammonia for the heavier soils of the irrigation areas. For vines, more phosphate in proportion may be desirable, and the 3:1 or 2:1 super. and ammonia or the 5:2:1 mixtures are recommended. To calculate how much of any of these mixtures is required to provide from 2 to 6 lbs. of sulphate of ammonia, simply multiply the quantity of sulphate or ammonia desired by the figure obtained by dividing the nitrogen content of the mixture into that of sulphate of ammonia, namely, 20.6. For example, if the 2:2:1 mixture is to be applied, it contains 8 per cent. approx. of nitrogen and therefore, as 20.6 divided by eight equals about 2.5, it will be necessary to apply an amount of the mixture equal to two and a-half times the quantity of sulphate of ammonia desired.

A Fruitgrower can usually derive greater benefit from an application of sulphate of ammonia in the spring than from any other single plant food treatment. Now is the time to decide how much sulphate of ammonia you can afford to give your trees or vines for the crop from which you expect so much next year.

. Dried Fruits . News and Notes

MILDURA DRIED FRUITS WEEK.

Dried Fruits Week, which was inaugurated by the Mildura Horticultural and Agricultural Society, was opened on July 16 by the Mayor, Cr. E. T. Henderson. The effort was a splendid success.

In an address from 3MA, Mildura, Cr. Henderson spoke appreciatively of the Chaffey brothers, who established the dried fruits industry in Mildura.

Continuing, the Mayor stated: "There are approximately 53,300 acres under cultivation in Currants, Sultanas and Lexias in Australia, the total quantities produced during the 1933 season being as follows:—

New South Wales . . .	5,589 tons
Western Australia . .	2,269 tons
Victoria	49,929 tons
Sth. Australia . . .	20,236 tons
	78,023 tons

Australian dried vine fruits sold overseas (principally England) in 1933 realised £2,000,000. During the past five years Australia had received £7,000,000 for the sale abroad of her dried fruit. The industry is a national asset. In the Commonwealth there are over 5,500 growers engaged in the production of Currants, Sultanas and Lexias, 2,000 of these are returned soldiers. In addition, it is considered there are 40,000 people directly and indirectly employed. Dried vine fruits are of marvellous food and health value."

DRIED FRUITS IN W.A.

At the June meeting of the W.A. Dried Fruits Board a letter was received regarding the under-export of Lexias, and it was decided to advise the Consultative Committee that the agents were adjusting between themselves. A report showed that, despite the warnings of the Minister and the board, considerable planting of dried fruits had taken place. It was decided not to continue to press for the amendment of the Dried Fruit Act, as expressed by the deputation which recently waited on the Minister.

Registration as a dealer was granted to "Meadow-Maid Products Pty. Ltd." It was reported that The R.S.D. and Perth Vinegar Brewery had been refused registration. A request from Messrs. L. M. Cullen & Co. Ltd. for the board's sanction for a sale of fruit for distillery purposes was approved subject to the necessary declaration being received.

There were present at the meeting—Messrs. J. N. Cox (chairman), P. H. Taylor, R. Howie, R. J. Lowson and H. O. Newman.

AUSTRALIAN DRIED FRUITS.

The Commonwealth Dried Fruits Export Control Board report that 164 tons of Australian dried fruits were recorded with the London agency of the board, as having been sold in Great Britain during the week ended July 26.

Fifty-two tons Sultanas averaged £44/6/8, 69 tons Currants averaged £38/15/-, and 11 tons Lexias made an average price of £43/10/3 per ton.

Thirty-two tons of 1933 season's Sultanas were disposed of at an average of £33/3/6 per ton.

The shipments to Great Britain of the present season's fruit now total 27,233, whilst 12,129 tons have been sold to other overseas markets, Canada taking 9,706 tons.

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Passion Fruit Growing

Sow Seeds in August: Plant Out in Early Spring, When Frosts Are Over.

By Geo. Quinn, Chief Horticultural Instructor, South. Aust. Dept. of Agriculture.

THE PRINCIPAL POINTS in securing good results in the cultivation of this plant may be summed up as follows:—

It is desirable to have a good, rich, free-working, well-drained soil located in a place not subject to very heavy frost during the winter months, as these plants are very readily injured by severe frosts.

The kind of Passion Fruit usually grown is the ordinary *Passiflora edulis*, which comes practically true from seeds.

The general method of raising Passion vines is to take the seeds out of good types of fruits and sow them straight away—before they have had time to dry out—in boxes or sheltered beds made up of good, free, sandy soil which can be kept well watered. The seeds are covered to a depth of about $\frac{1}{2}$ in. with loose soil made up of sand and rotted manure, which is pressed fairly firmly on to the seeds. The fruits

selected about June may be kept until August in a cool place, when the seeds are extracted and sown.

The seedlings, when sufficiently advanced—that is, when they are 4in. or 5in. high, should be transplanted either into boxes or pots in the first case, placing them about 4in. apart, so that they may be lifted with a ball of earth when ready to go out into the orchard. The young plants should be trained to a single stem. They are planted in the field in rows very much like Grape vines are, the rows being 9ft. or 10ft. apart to allow for implements to cultivate the soil, and the plants are set out from each other in the rows about 6ft. to 8ft. They are trained somewhat fan-shaped on a trellis resembling a five-wired fence, but above the height of an ordinary agricultural fence. Plants may be bought from nurserymen at about 6d. each, and set out of the pots without receiving any check.

The best time to set out these plants is

in the early spring

when most of the frosts are over, but they should be watered in when planting, and kept watered about once a fortnight for the first three months—if it is only a matter of giving them a bucketful of water. The tillage necessary approximates to that usually given Grape vines; whilst the pruning consists of cutting out exhausted shoots as they accumulate, thus keeping up a supply of laterals on which the fruits are carried.

As to the profitable character of growing them, that would depend very much on the time when the fruit becomes available for marketing, but they have the advantage over most fruits, that they are not readily injured by ordinary transport procedures. It never appears to be very cheap, and no particular effort has been made to push the sale of it or to induce greater quantities being used. It is doubtful if it would be a wise procedure for anyone to take up the growing of Passion fruit only, on a large scale, until, at any rate, one becomes accustomed to the requirements of the market and the methods of handling the crop and the plants.—“South Aust. Jour. Agric.”

Truth is our only armour in all passages of life and death.—R. W. Emerson.

The “HARVEY” CITRUS GRADERS AND DRY POLISHER BRUSHERS

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Model 11A Citrus Grader, equipped with Automatic Feed Hopper, Roller Elevator, Sorter, and Two Run-way Citrus Dry Polishing Brushes.

COMPLETE WET AND DRY LATEST PROCESSING EQUIPMENT
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Tasmania.—Max Geeves Pty. Ltd., Davey Street, Hobart.

„ Clements and Marshall Pty. Ltd., 119 Cimitiere Street, Launceston.

„ Harry Murray, Devonport.

Citrus News and Notes.

N.S.W. Citrus Growers.

Deputation Protests Against Marketing Act.

A deputation representing Citrus growers from the Murrumbidgee Irrigation Areas, Dural, Glenorie, and the Gosford districts, waited on Mr. Fitzsimmons, Honorary Minister, at the end of June, protesting against the inclusion of fruit in the legislation to amend the Primary Products Marketing Act. Mr. J. E. Ward, of Yoogali, instanced several notable cases of failure in this type of legislation.

Mr. Fitzsimmons promised to put the views of the deputation before the Premier.

£20,000 for Mandarin Growers

The Prime Minister announced early in July that the Federal Government had decided to grant £10,000 to assist Mandarin growers. This amount is to be supplemented by £10,000 from the N.S.W. State Government. Mr. Lyons said the grant was to offset the reverses suffered through the loss of the N.Z. market.

Field Day at Mildura.

GREAT INTEREST was displayed at Mildura on July 24, when Mr. J. L. Provan, Horticultural Research Officer, Victorian Department of Agriculture, demonstrated the increased production of choice fruit by bud selection from high-quality parent trees. Buds were taken from trees on the property of Mr. C. C. Whiteley (where are some of the largest Orange trees in Australia) and from Mr. H. Symons' Orange groves.

Capt. D. B. Halhed, chairman of the V.C.C.A., stated that, owing to inferior stock having been sold by some nurserymen in the past, it was intended to seek legislation to compel nurserymen to guarantee the trees they sold.

Citrus Red Scale.

In continuation of its policy to reduce Red Scale of Citrus fruits to a minimum, the Victorian Department of Agriculture recently prosecuted eleven Citrus growers in the Mildura district. Convictions were obtained in each case, and fines and costs amounted to something in the vicinity of £50.

The Superintendent of Horticulture (Mr. J. M. Ward) states that the department is determined to continue its insistence to enforce growers to make every possible endeavor to eradicate the scale from the Citrus groves; failure to do so will result in further prosecutions.

Embargo on Citrus Fruits.

The well known Mycologist from the New Zealand Department of Agriculture (Dr. G. H. Cunningham), was recently in Australia in connection with the New Zealand embargo on Australian Citrus fruits. He recently completed a tour of the Citrus areas along the Murray Valley and the Murrumbidgee Irrigation Areas.

Mr. Geo. Quinn, Chief Horticultural Instructor, of South Australia, accompanied Dr. Cunningham through the Citrus areas in that State, and upon his arrival in Mildura he was met by the Superintendent of Horticulture (Mr. J. M. Ward), who motored him to districts on both the New South Wales

and Victorian sides of the Murray River.

New South Wales officials took charge of the mycologist at Deniliquin, and motored him to the Griffith and Leeton Citrus areas in company with the New South Wales Director of Fruit Culture (Mr. C. G. Savage).

The chief reason for Dr. Cunningham's visit was to become fully acquainted with the geographical situation of the Citrus districts in connection with the Fruit Fly menace. The visitor is perfectly satisfied that South Australia and Victoria are quite free from the Fruit Fly pest, and that there are no host plants for the fly to continue an existence, even if it were present.

Bud Selection and Root-Stock Problems of Citrus Trees.

SOME FOUR YEARS AGO, experiments were commenced by Mr. J. L. Provan, B.Agr.Sc., Horticultural Research Officer, with the object of improving the quality of our Citrus fruits, and maintaining the health and productiveness of Victorian Citrus groves.

Rapid surveys of Citrus districts were carried out, and many samples of Washington Navel and Valencia Late Oranges were submitted for chemical analyses, and a tentative foundation for quality was determined. It was found that good quality Victorian Oranges should contain more than 40 per cent. juice, and that the total soluble solids (mostly sugars) should be between 12 and 15 degrees Brix, with the acidity ranging from 0.7 per cent. to 1 per cent.

During this survey, certain trees, which were yielding fruit of outstanding quality, were observed, and these trees were selected as parent trees from which to obtain buds for the reworking of trees bearing inferior quality fruit. Through the kind co-operation of many Citrus growers, reworking experiments were located in privately owned groves. In all, more than 300 trees were so reworked with selected buds, and many of these trees are now yielding crops of fine quality fruit. As a result of bud selection investigations, more than 6,800 young Citrus trees propagated with selected buds have been planted in Victorian Citrus districts, and 120,000 buds have been supplied to growers and nurserymen. More than 3,000 bearing trees, which were producing fruit of inferior quality, have been reworked with buds taken from selected parent trees.

This season, comparisons are being made of the fruit of both parent and progeny trees on the experimental plots, and a field day will be held at Red Cliffs towards the end of July, at which Citrus growers will have an opportunity of seeing the results of these experiments. Last season at a similar field day, growers were deeply impressed by the quality of the fruit from the reworked trees.

During the reworking experiments, investigations were carried out on the budding of Citrus trees, and the technique was so developed that it is now possible to obtain a "take" of 96 per cent. successful buds. A small pamphlet has been issued on this subject, and is available free on application to the Department of Agriculture, Melbourne.

To study the effects of root-stock on the quality of fruit and its productiveness, as well as on the general health and longevity of Citrus, a five-acre root-stock experiment has been planned, and trees will be planted next spring. All these trees have been grown by the department at a nursery in Merbein, and the raising of the seedlings and all the budding, etc., has been carried out by horticultural officers. The three root-stocks being used in this experiment are Sweet Orange, Sour Orange and Rough Lemon (Citronelle), whilst the scions are Washington Navel and Valencia Late Oranges from selected parent trees. Particular attention has been given to the late strain of Valencia Late Oranges, in order to ensure for the continuity of supplies on the Melbourne market from March till May.



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Summer Spot on Pears :: Codlin Moth :: Black Spot :: Oriental Peach Moth

Summer Spot on Pears

**Can be Controlled
by Spring Spraying
for Black Spot**

Sprays Recommended:— Two Pre-Blossom Bordeaux and one at Half Strength when Fruit has Set

(Address by S. Fish, M.Agr.Sc., Plant Pathologist, Vic. Dept. of Agriculture.)

At the annual meeting of the Southern Victoria Fruitgrowers' Association, held on July 5, at the Rialto Picture Theatre, Box Hill, Mr. S. Fish, M.Agr.Sc., Government Pathologist, gave an illustrated address on the research work in progress on the problem of Summer Spot of Pears, which is being investigated by the Department of Agriculture. This work, in which the Southern Fruitgrowers' Association are co-operating, is being conducted on Mr. O. A. J. Leber's orchard, Doncaster. During the course of the address, Mr. Fish said that the spray schedules practised by the growers for the control of Summer Spot prior to the commencement of these experiments were to a large extent based on the experience of orchardists. It was found that under such conditions the efficacy of such sprays was not consistent. In some seasons a grower would believe that he had an effective spray schedule, whereas where the same methods were applied in another season, a high percentage of fruit affected by Black Spot would result. This state of affairs led to much confusion, and the Department of Agriculture was asked to analyse the factors upon which consistent control of Summer Spot disease rested.

The first aspect of the problem to be investigated consisted of a study of the life cycle of the fungus, particular attention being given to the determination of the

source of the spores

from which the Summer Spot stage of the disease is produced. Counts were made of the primary Black Spot infections during the spring on the fruit, leaves and twigs at marked points throughout the experimental blocks. At varying periods during the season further counts were made at the same

points. This work showed that the percentage of fruit affected with Black Spot in the summer was correlated with the percentage of fruit affected with Black Spot in the spring.

This information pointed to the fact that the control of Summer Spot was intimately bound up with the successful control of the Black Spot which occurred in the spring.

It was then necessary to determine at what pre-blossom stages fungicidal sprays could be applied without causing spray injury. It was shown that from bud movement until the blossom buds were still green was a safe period for the application of the pre-blossom sprays. Beyond this period, i.e., at the white bud stage, fungicidal sprays of Bordeaux 6.4.40 could cause a very severe russet to the Pears.

The values of Bordeaux and lime sulphur as pre-blossom sprays were compared.

In this comparison two Bordeaux sprays were applied, the first being given just as the young folded leaves were protruding through the bud, and the second as the young folded leaves were well separated from the unclosed blossom bud.

Lime sulphur 1-20 was applied on the same day on the same varieties and at similar stages.

The results showed that Bordeaux mixture sprays gave a more effective control of the Spring Spot than did the lime sulphur sprays.

Where such trees received no further treatment Summer Spot developed.

The percentage of fruit affected by Summer Spot was greater where the lime sulphur sprays were applied.

Experiments With Pears.

In another series of experiments, extending over the four main export Pear varieties, Packhams, Bosc, Nelis and Williams, the two pre-blossom Bordeaux sprays applied at stages already described were followed in some instances by lime sulphur 1-80 and in other instances by half-strength Bordeaux 6-4-80. These cover sprays were given about three weeks after the fruit had set.

The results showed that where the half-strength Bordeaux 6.4.80 was applied following the two pre-blossom Bordeaux sprays, Summer Spot development did not occur. This result was consistent throughout all the varieties under test.

During the second year of the work efforts were made to determine whether a

more effective pre-blossom

treatment could be obtained than that of two Bordeaux sprays. Consequently, four different combinations of pre-blossom sprays were tested. These consisted of the two Bordeaux sprays at the stages mentioned, two Bordeaux

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sprays to which one gallon of white oil was added to 80 gallons of the spray, a Bordeaux just as the young folded leaves were protruding through the bud, followed by lime sulphur 1-20 at the white bud stage, and Bordeaux again as the young folded leaves were protruding through the bud, followed by a zinc lime 4.4.50 at the white bud stage.

The results showed that these last three treatments were no improvement on the two pre-blossom Bordeaux sprays.

The next aspect to be investigated was the effect of varying concentrations of Bordeaux mixture as a cover spray for Summer Spot following the two pre-blossom Bordeaux treatments.

Bordeaux sprays varying from quarter strength to half strength were used, and it was found that the most effective control of Summer Spot was obtained with the half-strength Bordeaux.

This half-strength Bordeaux caused a slight russet on the green Pear varieties, and where reduced to quarter strength there was no appreciable diminution of this russet. This slight russet which the half-strength Bordeaux produced on the green Pears was not severe, and did not prevent the inclusion of such Pears in the standard grade for export.

Zinc lime spray, which consisted of 4 lbs. of zinc sulphate, 4 lbs. of slaked lime and 50 gallons of water, was tested as a cover spray following two pre-blossom Bordeaux sprays, and did not effectively prevent Summer Spot development.

Further work will be conducted with this material, because it did not russet the fruit at the strength used.

The experiments to date have shown that consistent results for the control of Summer Spot of Pears may be obtained by spraying two pre-blossom Bordeaux sprays of 6.4.40 followed by half-strength Bordeaux two to three weeks after the fruit has set.

This schedule has been consistent in its control of Summer Spot throughout each year of the experiments, throughout each variety under test, and also where replicated within the variety.

The experiments showed that arsenate of lead could be added to half-strength Bordeaux without causing any injury to the tree.

Further work will be conducted in an effort to obtain a substitute for the half-strength Bordeaux, but in the meantime growers would be well advised to adopt the triple Bordeaux schedule, as a slight russet and freedom from Spot still permits fruit to be exported as standard grade, whereas spotted fruit, except what is permissible under plain grade, cannot be exported. It is estimated that 2d per bushel case of Pears will cover all costs of this triple Bordeaux spray.

Codlin Moth Control.

Importance of Orchard Sanitation—Spray Programme Described, Plus Use of White Oil—Bandaging and Lures.

(By R. T. M. Pescott, M.Agr.Sc., Entomologist, Dept. of Agriculture, Vic.)

THE CODLIN MOTH and its control form the subject of an interesting article by Mr. R. T. M. Pescott, M.Agr.Sc., Entomologist, Department of Agriculture, Victoria. Mr. Pescott believes the Codlin Moth originated in South-western Europe, and it spread gradually to England, America, South Africa, Australia and elsewhere. After describing the nature of the injury, the extent of the losses and the life history of the pest, Mr. Pescott continues (in the Journal of Agriculture, Victoria) by dealing with control measures, as follows:—

Control Measures.

The control measures consist essentially of processes for destroying the pest in different stages of its development. These can be considered under four distinct headings—(a) orchard sanitation, (b) spraying, (c) bandaging, and (d) the use of lures.

Orchard Sanitation.

This is by far the most important feature of Codlin Moth control, and frequently

the one most neglected by growers. The high percentage of infection in the vicinity of the fruit-houses and packing sheds, often in spite of extra sprays, shows very clearly that sprays, however carefully applied, cannot cope with the pest unless the orchard is kept clean.

At the end of each season the orchardist should take particular care to free his packing sheds and surroundings from the Codlin grubs which have crawled from infested Apples and made cocoons in cracks and sheltered places. The provision, whenever practicable, of moth-proof fly-wire screens over doors and windows to prevent egress of emerging moths is a simple and inexpensive method.

Cases used in transporting fruit from the orchard, and all returned cases should be examined, and any grubs in them killed. The best method is to dip all cases in boiling water, to every 20 gallons of which 1 lb. of washing soda



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has been added. Immersion for two minutes in this solution is desirable. This treatment has a double effect in that it destroys the spores of moulds and other fungi, as well as all insect pests hidden in the cases. Props and poles used in the orchard should be kept free from bark and examined for grubs. This is a very important precaution, upwards of 80 grubs having been found in one pole in an orchard quite recently.

As most windfalls are affected with Codlins they should be gathered up once a week during the Apple season, and destroyed by burning or boiling, or else fed to pigs. If the Apples are given to pigs, they should be fed as soon as gathered; if they are stored for any length of time, they become a hatchery for the moth. It pays also to have all infested Apples picked at least once or twice during the season, and treated as previously suggested.

Spraying.

Spraying with arsenates, and particularly arsenate of lead, has been the standard method of dealing with the Codlin Moth. To a certain extent, this method has provided a quite efficient control, but it suffers from the objection that there is a considerable arsenical residue present on the fruit at picking time. This is a serious matter, as Great Britain has imposed an embargo on the importation of Apples and Pears containing more than 0.01 grains of arsenic per pound of fruit, the arsenic being reckoned as arsenic in arsenic trioxide. In the departmental tests at Harcourt, Vic., the aim has been to obtain a spray programme, which, in addition to giving a more efficient control of the Codlin Moth than arsenate of lead alone, would be economically sound, and leave an arsenical residue below the limit prescribed by law. The principal material used in the tests at Harcourt has been a

white oil emulsion,

and the results with this have been very striking. The results of the experiments at Harcourt, over the period of three years in which the white oil has been used, are set out in Table I.

Spray programme 1, shown in this table, consisted of five sprays of arsenate of lead paste (5 lb. in 80 gallons of water). The first spray was applied when about 80 per cent. of the petals had fallen from the flowers, and the second ten days later. The remaining three sprays were applied at intervals of approximately four weeks. Spray Programme 2 consisted of two calyx sprays of arsenate of lead paste (5 lb. to 80 gallons of water), followed by three sprays of white oil emulsion applied, at a strength of 1 in 60, at intervals of approximately four weeks. Spray Programme 3 consisted of two calyx sprays of arsenate of lead paste (5 lb. to 80 gallons of water), followed by a white oil spray (1 in 60) one month

later; then an arsenate of lead spray one month later, and finally another

white oil spray (1 in 60) a month later again.

Spray Programme.

- 1.—Arsenate of lead alone
- 2.—Arsenate of lead calyx sprays followed by white oil sprays
- 3.—Arsenate of lead and white oil sprays alternately

Percentage of Codlin Moth at Picking Time.			Arsenical Residue in Grains per lb. of Fruit.		
1929-30.	1930-31.	1932-33.	1929-30.	1930-31.	1932-33.
17.6	16.7	7.3	*	0.032	0.039
3.6	6.2	4.2	*	0.0022	0.006
3.8	11.3	4.2	*	0.015	0.008

*No analyses made.

The results show that the percentage of Codlin Moth was considerably reduced with the oil spray, while the residual arsenic was definitely reduced below the limit prescribed by law. It can be shown also that, when the costs of the above spray materials are considered, both of the oil spray programmes are economically sound, i.e., that the extra cost of the oil in the programme is more than balanced by the increased yield of marketable fruit. These tests indicate that fruitgrowers should include spraying with white oil in their Codlin Moth spray programmes. Either of the spray programmes 2 or 3 can be recommended.

(c) Bandaging.

Bandaging the trees, by placing around the trunks some material which will act as a trap for the larvae seeking a place to pupate is an important aid in the control of the Codlin Moth. Bandages may consist of two types—

- (i) Hessian bandages.
- (ii) Chemically treated bandages.

Hessian bandages are made of a material which is fairly thick, and close in texture, wheat-sacks or wool-bales being ideal for the purpose. They should be cut into strips about 6 to 8 inches in width, folded once, with the opening of the fold facing downwards, and attached to the tree so as to be clear of the ground. One method of attaching the bandage is to drive into the trunk a fine nail, allowing it to project about three-quarters of an inch. One end of the bandage is hooked on to the nail, the bandage being carried around the tree, and the other end hooked over the same nail. One end should overlap the other by two or three inches. The bandages should be put on the trees about mid-November, and removed not earlier than the beginning of June nor later than the end of August. In bandaging with hessian the following points are important:—

- (i) The trees should be thoroughly scraped free from all rough bark before the bandage is applied; otherwise half the efficacy of the band is lost;

- (ii) the material used must be of a fairly thick and close texture; and
- (iii) bands must be examined every 10 to 14 days; otherwise they form ideal breeding grounds for Codlins.

Unless this condition is complied with, it is much better to have no bandages at all.

The object of the chemically treated bandage is similar to that of the hessian bandage, with the addition that it is designed to destroy all grubs that enter the bandages, thus obviating the necessity for regular examination. Chemically treated bandages have been tried out by the department during the past year, when extremely successful results were obtained.

(d) Lures.

Lures consist for the main part of glass or porcelain jars of about 1 pint capacity, containing either fermented Apple juice, or a 10 per cent. vinegar solution. These jars are hung in the tree, with the object of trapping the adult moths. Best results are obtained when these lures are hung in the upper third of the tree. The lures serve a double purpose—(1) they trap a large number of moths actually flying in the orchard (about 60 per cent. of the many thousands of moths trapped in the course of our experiment were females in a fit condition for egg laying); and (2) they serve as a most useful guide for the determination of the correct time at which to apply the sprays. Occasionally growers apply some of their sprays at the wrong time, and the spray is partly wasted. By using lures, and by determining, by counting, the actual number of moths caught, they are able to tell when the particular brood concerned is reaching its maximum.

REGULATIONS.

Regulations under the Orchard Supervision Act require that—

- (a) The owner or occupier of any land on which are any trees, plants, or vegetables infected with or likely to be infected with insects, fungi, or diseases shall take all such measures and do all



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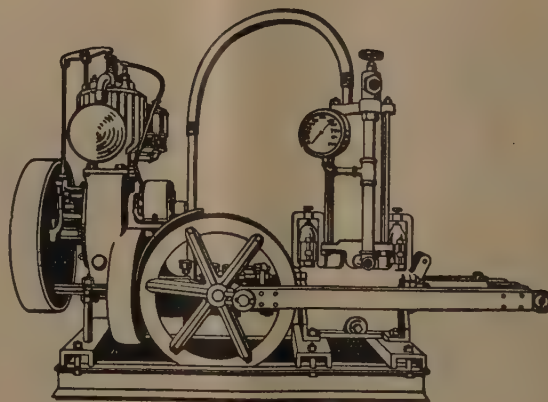


Fig. 322 S.

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such acts as are prescribed by these regulations or such other measures or acts as an inspector orders to be taken for the effectual treatment of diseased trees, plants or vegetables and the effectual eradication of disease and the destruction of any insect or fungus.

(b) **Codlin Moth.**—All Apple and Pear trees shall be sprayed with arsenate of lead or an approved insecticide to the satisfaction of an inspector. The strength of the spraying mixture shall be not less than 1 lb. of arsenate of lead paste or its equivalent to 20 gallons of water. In addition to spraying as aforesaid, all infested Apples and Pears and other infested fruits shall be collected by the owner or occupier of any land and destroyed at least once in each period of four days. All Apple and Pear trees shall be kept clean of dead loose bark and broken limbs. Any stakes, props, or other material likely, in the opinion of an inspector, to harbor the larvae or pupae of the Codlin Moth shall be removed, and, if found to be infested, shall be destroyed.

General Recommendations.

1. Incorporate in your spray programmes two or three sprayings with a recognised white oil emulsion, 1 in 60, after the initial early sprayings with arsenate of lead. These can be used solely or in alternation with arsenate of lead. It will be found that the percentage of Codlin Moth is considerably reduced, and at the same time the arsenical residue will be reduced below the limit allowed by law.

2. Pay strict attention to orchard hygiene in the matter of clean packing-sheds, clean poles, props, and cases.

3. Bandage the trees either with closely-woven hessian bandages, or with chemically treated bandages. If hessian is used, examine these every ten to fourteen days, and destroy the grubs found.

4. Use lures in the trees as an aid to determining the correct time at which to apply sprays.

Orchard Sanitation is stated by the Victorian Government Entomologist to be by far the most important feature of codlin moth control,—yet it is frequently the most neglected one by growers. Details are given in this issue.

Allowing for an average loss of 5 per cent. from codlin moth, Mr. R. T. M. Pescott, M.Agr.Sc., Government Entomologist, estimates that the loss in fruit amounts to 100,000 cases, valued at over £25,000. Further, the pest is responsible for heavy expenses in purchasing and applying sprays.

The codlin moth was probably introduced accidentally into Australia from England by early settlers.

Western Australia is the only State free of the pest, constant vigilance being maintained there,

That Codlin Grub.

How Large is its Mouth? Can Particles of Lead Arsenate be Swallowed?

Remarkable Tests by Dr. Cunningham,
of New Zealand.

ADDRESSING the annual conference of the N.S.W. Fruitgrowers' Federation recently, Mr. H. E. Napier, of New Zealand, said that some remarkable tests had been carried out by Dr. G. H. Cunningham, Mycologist, N.Z. Dept. of Agriculture. The mouths of the tiny grubs had been measured, and it had been noted that for poisoning purposes it was necessary for the lead arsenate to be as fine as possible. If the particles were too large they could not be eaten by the grubs.

This subject was referred to Australian manufacturers, who have responded variously.

One firm heartily endorses Dr. Cunningham's findings, and states that the mouth of the young larvae is approximately 10 microns, and the particles of lead arsenate would necessarily have to be smaller.

Another firm expresses keen interest, and asks for more details, at the same time stating that in the absence of definite data they believed in the great importance of fineness in the arsenate of lead particles, both paste and powder.

Other replies are in the cautious strain, and refer to the killing power of arsenate of lead in average seasons.

Oriental Peach Moth.

It is understood that the Victorian Department is about to make intensive investigations into the life history and methods for controlling this pest, which, as stated in previous issues of the "Fruit World," have been responsible for great losses of Peaches in the Goulburn Valley. The pest is also beginning to make itself felt elsewhere in the State. It is not, however, likely to become the serious menace in districts where other than late Peaches are grown, for it is the late fruit that the insect appears to have a preference.

In carrying out the investigations, it is almost certain that the department will

establish an insectary.

somewhere in the Goulburn Valley, and station an entomologist there, so that he may be continually on the spot. In the meantime, growers should do their part in having a general clean up of all coverings, etc., on and adjacent to Peach and Quince trees in particular, that harbor the grub. In other words, the same winter treatment should be adopted as in the case of codlin moth control, and thus destroy the larva of the moth and prevent it from becoming an egg-laying moth.

By adopting hygienic methods in Peach orchards, and the destruction of odd-non-commercial Quince trees, growers will be able to keep the pest in check.

It is understood that the canneries are prepared to financially assist in the proposed investigations. They recognise that

the loss of so much fruit is reducing the output of the canneries, and, like those who subscribed towards the cost of fighting the thrips plague, the various cannery proprietors consider that an industry should be prepared to meet the costs of investigating such a problem as the Oriental Peach Moth, or thrips, etc.

Brown Rot of Stone Fruits.

This disease has been responsible for a considerable amount of loss of Peaches, Plums and Cherries; and if suitable weather prevails during spring and summer months growers will suffer even greater loss next season than they have suffered in the past.

The first signs of the disease will be noticed in the blossoms, which, when attacked, turn brown and wilt, but remain on the tree instead of dropping. Leaf infection rarely shows up in Victoria. Twig infection is common throughout the State, and is the principle source for spreading the disease throughout the tree. Sometimes the frost is blamed for twig injury, when in reality the trouble is due to Brown Rot. When pruning the tree, all affected twigs—say, all dead twigs or those that have a diseased appearance, should be cut out and burned during pruning operations, and thus minimise the principal means of spreading the disease. All "mummies"—dried up fruit from last season—that may be on the trees should be removed.

The trees should be sprayed with lime sulphur at 1-9 just as the buds are swell-

ing, and again, a few weeks later, that is, just as the fruit buds are about to burst, another spraying should take place at 1-35. Later on, when the fruit is full grown and about to color, a still further spraying at 1-80 should be given. If the season continues to be a wet one, occasional spraying at 1-100 should be given at, say, two to three weeks' intervals, or, at any rate, three to four weeks before picking takes place. Although this involves a considerable amount of work, it is necessary if clean fruit is to be harvested. The first and second applications are the most important, and should not under any circumstances be omitted.

Making Bordeaux Mixture.

Most growers are well aware as to how this mixture should be made up. There are, however, always new growers, who are seeking information, hence the reason for submitting the following—To make the 12-8-80 formula, the fresh lime must be slaked and, after straining with cheese-cloth or similar material, sufficient water should be added to make up to 40 gallons. Dissolve the bluestone (hot water will expedite this) and dilute to 40 gallons of bluestone solution. The milk of lime and bluestone solution should then be run in the spray vat through the strainer attached to the vat of the spray pump. This mixture should be used soon after it is made up. A stock solution of bluestone can, if necessary, be prepared by dissolving 10 lb. of bluestone in 10 gallons of water. When preparing the spray, take 12 gallons of this solution and dilute to 40 gallons. A stock mixture of milk of lime may also be prepared, using 1 lb. of fresh lime to each gallon of water. For use of the mixture, take 8 gallons, agitate thoroughly, and dilute to 40 gallons before running it into the bluestone solution.

Appointment of Mr. A. G. Strickland, M.Agr.Sc., to South Australia.



Mr. A. G. Strickland, M. Agr. Sc., Horticultural Research Officer, of the Victorian Department of Agriculture, has been appointed by the South Aust. Dept. of Agriculture to succeed Mr.

Geo. Quinn, Chief Horticultural Instructor in that State.

Mr. Quinn has already reached the retiring age, 65 years, but his services have been retained for at least twelve months. Mr. Strickland has been with the Division of Horticulture in Victoria for a period of some seven years, during which time he has, among other work, been engaged in making investigations into the following problems connected with the fruit industry—Removal of Arsenical Spray Residue from Apples and Pears, Harvesting of Apples, Winter Injury to Peach Trees, Manuring the Vine (Uniformity Trial), Tomato Culture, Pollination of Fruit Trees, Manuring of Fruit Trees, Alkalinity and Irrigation Practices on Fruit Trees.

Mr. Strickland had an exceedingly good academic career at the Melbourne University, where he qualified as B.Agr. Sc. with final honors in the minimum period of four years. In the course of his studies he was awarded the following exhibitions:—1925: J. M. Higgins' Exhibition in Agriculture and Agric. Chemistry; 1927, James Cuming Prize in Agricultural Chemistry and Bio-

Chemistry. Two years after graduating as B.Agr.Sc., Mr. Strickland submitted a paper on research work he had been engaged upon, and as a result of such work was admitted to the degree of M.Agr.Sc.

Mr. Strickland's work in the Victorian Department has been greatly appreciated by fruitgrowers throughout the State, where he is most popular with both fruitgrowers and his fellow officers. The Superintendent of Horticulture (Mr. J. M. Ward) states that Mr. Strickland, although only 29 years of age, is a most efficient officer, and a very likeable person; and, whilst regretting his loss to Victoria, considers that the growers in South Australia are fortunate in obtaining his services, where he should be a great success in his new position. He was on the eve of promotion in Victoria when he received the appointment in South Australia.

Promotion of Mr. F. M. Read, M.Agr. Sc.



Mr. F. M. Read, M.Agr. Sc., who for some years has been Senior Horticultural Research Officer in the Division of Horticulture, Victoria, has recently been promoted to the newly created position

of Chief Inspector of Horticulture in the Victorian Department of Agriculture, and this places him second in the Division to the Superintendent of Horticulture (Mr. Ward). Mr. Read was educated at Scotch College and the Mel-

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bourne University, and is now 31 years of age. He is well known and very popular among the fruitgrowers of Victoria and other States. He joined the department in 1925, and one of his first jobs was to make investigations into alkalinity troubles in the irrigated fruit districts in the northern part of the State, where he carried out exceedingly good scientific work. In addition to this, Mr. Read has been engaged on a number of problems of interest to fruit-growers, and more particularly on Manuring of Fruit Trees, Preservation and Handling of Citrus Fruits, Lemon Curing, Orchard Irrigation Practices, Studies of Growth and Fruit Bud Formation, and Seepage Problems. He had a most excellent career at the Melbourne University, where in 1925 he graduated as B.Agr.Sc., obtaining first class final honors. Some two years later, as the result of research work carried out by him, he obtained the degree of M.Agr.Sc. At the conclusion of his course he shared the final honor exhibitions in (1) Agric. Botany and Agric. Bacteriology, and (2) Agric. Chemistry and Bio-Chemistry, and was awarded a research scholarship in the School of Agriculture, Melbourne University.

The appointment of Mr. Read to his present position is no doubt in accordance with the policy of the Department of Agriculture to strengthen the department with a view to conducting a greater amount of research work on fruit problems.

Green Peach Aphid.

During a recent examination of Peach trees in the Goulburn Valley and Ncaster districts, the Asst. Entomologist (Mr. Keighley Ward, M.Agr.Sc.) has reported that the egg-laying forms of the Green Peach Aphid were abnormally numerous on Peach trees, and that the winter eggs of the insect were being deposited on trees in great numbers.

In the opinion of Mr. Ward this heavy deposition of eggs portends an epidemic outbreak of the insect next spring, and, provided weather conditions are cooler than usual during next September and October, such an outbreak will undoubtedly occur.

The abundance of the aphid is accounted for by the unusual prevalence during the past summer and autumn of various weeds on which the insect normally exists from December to April each year. These weeds have provided an ample food supply, on which the aphids have been able to increase greatly in numbers before migrating to the Peach trees.

In order to prevent outbreaks in individual orchards it is recommended that Peach and Nectarine trees should be sprayed with tar distillate winter wash at a strength of 1 in 35 before July 15. Where trees have been pruned before being sprayed, the prunings should be burned to destroy aphid eggs on them.

Effects on Apple Trees of Lime Sulphur following Bordeaux Mixture

No Injury Provided Lime Sulphur is Not in Excess

(By Dr. G. H. Cunningham, Mycologist, Plant Research Station, Palmerston North, N.Z.)

MANY ORCHARDISTS hold that leaf and fruit injury results when lime sulphur is applied to trees sprayed with Bordeaux mixture, unless a considerable time interval is allowed to lapse between applications. This belief was promulgated by a grower, who claimed that reaction occurred between the lime sulphur and Bordeaux residues on the tree, leading to the formation of copper sulphide, which produced sulphuric acid when in contact with water. This acid was believed to attack and destroy the stalks of fruits and leaves.

The matter was investigated by the Horticulture Division of the Department, and a series of experiments was conducted in orchards at Arataki (Hawke's Bay) and Christchurch. Results showed that under the conditions of the tests, based on current spray practices, no noticeable injury resulted.

Notwithstanding these experiments, the belief still persists among orchardists in certain localities. Consequently several field and laboratory experiments have been undertaken to ascertain whether injury occurs, and, if so, whether it is possible to prevent such under field conditions.

When equivalent solutions of copper sulphate and lime sulphur are combined*, a heavy dark brown precipitate is produced, which is soluble in excess lime sulphur. If Bordeaux mixture, containing the same amount of copper (in the form of copper hydroxide) is used in place of the copper sulphate, a similar precipitate, also soluble in excess lime sulphur, is formed. This latter precipitate is somewhat different in that it is heavier and less flocculent, possibly owing to the presence of quantities of calcium hydroxide. The precipitate would appear to be composed of a mixture of copper polysulphides and cupric sulphide**.

To ascertain whether injury is liable to occur, the following experiments were undertaken. Trees of the varieties Delicious, Jonathan, Sturmer and Rome Beauty were sprayed in early December with the following compounds:—

- (a) Lime sulphur alone at 0.1 per cent. concentration.
- (b) A precipitate obtained by combining equivalent amounts of copper sulphate and 0.1 per cent. lime sulphur.
- (c) A precipitate obtained by combining equivalent amounts of Bordeaux

mixture and 0.1 per cent. lime sulphur.

- (d) A solution containing half the amount of copper sulphate used in (b) dissolved in 0.1 per cent. lime sulphur.

Additionally, one tree in each series was sprayed with water daily for four-teen days, with a view to increasing the possibility of injury.

No injury has been observed on trees in series (a), (b) and (c). In series (d), however, slight leaf-scorch was noticed on Sturmer and Delicious varieties, and fruits of all trees showed somewhat severe injury. This was most noticeable around the periphery of spray deposits, in several instances a ring of small black lesions being produced at this point. This injury is due to the soluble copper compounds present in the spray, and, judging from these experiments, is liable to occur only when lime sulphur is in considerable excess of the copper salt. The fact that no injury followed applications (b) and (c) is significant. For if the amount of copper sulphate used (equal to 3 lb. per 100 gallons) were applied alone, severe injury would have resulted; and a Bordeaux application of equivalent concentration would have produced fruit russet. Combination, therefore, produces sprays which are at least as safe to apply to trees in leaf as 0.1 per cent. lime sulphur. It is doubtful, though, if anything is to be gained by the combination; for when applied to trees it produces a heavy black deposit, which disfigures fruits and leaves. This deposit is very adhesive, when prepared with copper sulphate, persisting for weeks without appreciable diminution, and appears less fungicidal to Black spot than 0.1 per cent. lime sulphur.

These results, while not conclusive, are sufficiently definite to indicate that no injury follows applications of a Bordeaux mixture or copper sulphate plus lime sulphur combination, provided the lime sulphur is not in excess. Approximately 3 lb. of copper sulphate are required to precipitate completely the polysulphides in 100 gallons of 0.1 per cent. lime sulphur. Consequently, soluble copper compounds are not formed when 3-4-50 Bordeaux is combined with 0.2 per cent. lime sulphur, as an approximately neutral compound is produced. By decreasing the copper content, or by increasing the lime sulphur, injury is

likely to result, owing to the formation of soluble copper compounds.

Theoretically, therefore, injury would actually be increased by increase in the time interval between Bordeaux and lime sulphur applications, owing to weathering of the Bordeaux with consequent loss of copper salts. It is not possible to ascertain this loss, owing to the complex of factors involved. Field tests conducted at the Research Orchard, Nelson, and at this station have shown that no noticeable injury follows applications of 0.2 lime sulphur at pink or pre-pink to trees sprayed at green tip with Bordeaux 5-4-50. This is substantiated by the earlier experiments conducted at Arataki and Christchurch. These results suggest either that little loss of copper occurs during this period, or, more probably, that the copper hydroxide of the Bordeaux is after deposition converted into an insoluble compound of the nature of copper carbonate. If such were produced on the tree, then there would be little likelihood of reaction between this compound and lime sulphur, since in our tests no reaction was secured when equivalent amounts of copper carbonate and lime sulphur were combined.

It is safe to conclude, therefore, that injury is not likely to follow when Apple trees are sprayed with either 5-4-50 or 3-4-50 Bordeaux mixture at green

tip, and followed at pink or pre-pink stages with 0.2 per cent. lime sulphur.

I am indebted to Mr. R. L. Andrew, Assistant Dominion Analyst, Dominion Laboratory, Wellington, for literature references; to Mr. J. D. Atkinson, Research Orchard, Nelson, for carrying out several field tests, and to Mr. E. E. Chamberlain, of this laboratory, for the preparation of the materials employed in these tests conducted at this station. —N. Z. Journal of Agriculture.

*We have ascertained that 5 grammes of copper sulphate are required to precipitate completely 9 c.c. of 18-per cent. calcium polysulphides. Amner's lime sulphur was used in these tests.

**According to Mellor ("A Comprehensive Treatise on Inorganic and Theoretical Chemistry," Vol. 3, p. 225), a precipitate of cupric sulphide and copper polysulphide, soluble in excess ammonium polysulphide, is produced when copper salt solutions are treated with ammonium or potassium polysulphides. As copper sulphate and lime sulphur behave similarly, it is reasonable to assume that the precipitate is of similar composition.

It requires strength and courage to swim against the stream, while any dead fish can float with it.—S. Smiles.

STATIONARY SPRAY PLANTS.

There are 63 stationary spray plants in Tasmania, states Mr. P. H. Thomas, Chief Horticulturist. The cost of installing a plant to serve 15 acres is about £250. The overhead system of piping is preferred.

BORDEAUX PASTE.

"Sincos," a Bordeaux spray, is manufactured by the Bordeaux Chemical Co. in accordance with the regulations of the Fungicides Act. This paste is readily miscible with water, and remains a long time in suspension. "Sincos" is guaranteed by the firm to contain not less than 65 per cent. of combined copper sulphate calculated on a dry basis. It is non-poisonous and, as its name implies, is free from water soluble sulphate of copper. It leaves no residue in the bottom of the tank, requires very little agitation, and will not choke the finest spray nozzle. Experience shows that where "Sincos" is applied it is not necessary to use a spray spreader. Further particulars regarding "Sincos" are given in their advertisement elsewhere in this issue.

Passenger: "Stop, stop! A lady has just fallen off the bus."

Conductor: "Oh, that's all right. She's paid her fare."

Better Apples by Better Spraying **MANGANAR and AGRAL 1**



Manganar vs. Codlin Moth

Manganar is a non-lead insecticide for the control of Codlin Moth and other leaf-eating insects. Manganar can be used in combination with Summer Oils, Nicotine, Summer Oils-Nicotine combinations, Bordeaux, Lime, or Sulphur sprays.

Agral 1 is an entirely new and outstanding wetter and spreader. It mixes with practically every spraying material, and, unlike soap, can be used at the ordinary strengths with hard water. It has an activating effect on most insecticides and fungicides. Used in combination with Manganar, Agral 1 will give excellent results in your efforts against many plant diseases.

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Control of Orchard Insect Pests

Scale Insects, Red Spider, Bryobia Mite—Green Peach Aphid: Black Peach Aphid: Black Citrus Aphid: Citrus Scale.

Importance of Orchard Sanitation.

(By Keighley M. Ward, M.Agr.Sc., Asst. Entomologist, Dept. of Agriculture, Victoria.)

SPRAYING is by far the most important of the different steps which can be taken during the winter against fruit tree pests. When trees are in the leafless, dormant state, strong spray materials can be applied to them without causing plant injury, and although during the winter many insects are strongly fortified under waxy scales or in a resistant egg stage, a higher proportion of them can be killed because none of them are protected by foliage. The most important pests which are at present dormant and against which preventive spraying measures can be effectively used, are scale insects, red spider and green Peach aphid (so stated Mr. Keighley, M. Ward, M.Agr.Sc., Asst. Entomologist, Victorian Dept. of Agric., in a recent broadcast talk over 3LO).

Scale Insects.—It can be safely said that all kinds of scale insects on deciduous fruit trees can be destroyed by winter sprayings. Among these are the San Jose scale attacking Apples and Pears, the Apple mussel scale, also on Apples, the vine scale on Grape vines, and various fruit trees; Raspberry scale on berry fruits and Rose bushes; Olive scale on nearly all types of fruit trees. With either lime sulphur (1-9) or red oil 1 in 15.

Oil sprays in winter should control scale pests on citrus trees, the olive scale, the brown scale, and the red scale. Use the more highly refined white oil, 1-60. (If red oil is used there is the danger of injury to the foliage.)

Red Spider and Bryobia Mite.—These pests appear frequently on Apple, Pear and Plum trees, in addition to vegetables and other garden plants. On fruit trees they cause injury during the warmer months by sucking sap from the leaves and causing them to turn yellowish. When a tree is heavily attacked, the leaves die and the fruit is unable to reach maturity. The pests pass the winter in the egg stage, the eggs being laid during autumn in masses on fruit spurs, around the buds, and on any roughened surface on the tree: also on orchard props. The winter eggs commence to hatch in September, and the young mites at once begin to feed on the leaves, and they continue to do so throughout the spring and summer. The winter eggs are very minute, but can be readily seen on twigs and fruit spurs

owing to their reddish color, and the fact that they are always laid in masses.

It is important that these pests be dealt with before foliage appears on the trees in spring, because only partial control can be effected once the leaves have grown and have afforded shelter for the mites. They live and breed chiefly on the undersurfaces of the leaves. Spray with either lime sulphur, 1 in 12, or red oil 1 in 15, just when the eggs commence to hatch, i.e., during August.

Green Peach Aphid.

Another insect whose attack can be prevented by winter spraying is the green Peach aphid, which in some years causes much damage to Peach and Nectarine trees and results in a severe reduction in crop. In its life history it alternates between two groups of host plants. In spring the insect lives on Peach trees and it is then that the injury is caused. But early in summer all the aphids become winged and fly off to secondary food plants, including various weeds on which they live throughout the summer, reproducing several generations. In autumn, winged forms again develop, and these fly back to Peach trees, where winter eggs are laid around the buds.

The abundance of this insect varies with weather conditions. Two groups of weather conditions may lead to an abnormal outbreak.

(1) If the summer and autumn weather is suitable for the abundant growth of certain weeds, a plentiful summer food supply is provided, and aphids breed in large numbers. An abnormal increase in the numbers of aphids in autumn will result in a heavy migration to Peach trees, and great numbers of winter eggs will be laid. These eggs provide for heavy infestation in the following spring.

(2) Certain weather conditions must exist in spring if an outbreak is to occur. Conditions are favorable if the September temperatures are a little above the average, and the October temperatures are a little below the average, i.e., a cool spring and the absence of hot winds.

The summer and autumn weather this year has undoubtedly been very favorable for the production of large numbers of egg laying forms of the aphid, and actually very large numbers of the eggs have been deposited on trees in Peach orchards in both the Goulburn Valley and the Doncaster Peach growing districts. Moreover, this year the egg-laying period has been prolonged by about two weeks. Hence, the first condition necessary for a heavy infestation has been fulfilled, and I have no doubt that the insect will be unusually

abundant next spring
if certain weather conditions occur.

Orchardists - Vignerons - Horticulturists

Black Spot, Mildew, Scab, Blight, Shot Hole, Oidium, Leaf Curl in Peaches, Pear Scab—are all PREVENTABLE fungus diseases.

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is the most effective weapon modern research has developed for combating all the fungus growths that can take toll of your capital and labor investment.

BORDEAUX CHEMICAL COMPANY Pty. Ltd., 4 Glenbrook Avenue, East Malvern, S.E.5.

An outbreak of the insects in any particular orchard can be prevented by spraying it at the egg stage with egg-killing winter washes.

The most effective material for the purpose has been found to be specially prepared tar distillate used at a strength of 1 in 35.

The insects dealt with so far are nearly all inactive during winter, but there are several species which are active on the trees during winter, among them being the black Peach aphid, the black citrus aphid, the woolly aphid.

The black Peach aphid does not lay winter eggs and therefore cannot be controlled by egg-killing sprays; but it infests Peach trees from the roots on which the species lives the whole year round. In winter and spring some of the root infesting aphids migrate upwards to the branches, where they feed and reproduce in great numbers. Spray with nicotine sulphate, 1 pint in 80 gallons of water to which $\frac{1}{2}$ lb. of soft soap

has been added, one application, being made about the end of July, and another about three weeks later. Before planting out young Peach trees they should be soaked for one or two hours in nicotine sulphate, 1 pint in 80 gallons of water, as nursery stock is often infested by the aphid on both the roots and the twigs.

The Black Citrus Aphid infests Orange and Lemon trees during winter and can be satisfactorily dealt with by means of the nicotine sulphate spray just mentioned. Apply on a warm sunny day because much of the effectiveness of the material depends on its being able to evaporate quickly.

Woolly Aphis is usually controlled during summer by means of parasites which are supplied to orchardists on application to the Department of Agriculture, Melbourne. These cannot be supplied, however, until early summer, but any grower desiring to free his Apple trees from this pest during winter, can

do so by spraying with red oil, 1 in 20, or with white oil, 1 in 60, plus $\frac{1}{2}$ pint of nicotine sulphate.

Orchard Sanitation will destroy great numbers of insects. The winter measures are:—

1. Burning of Prunings.—Although the prunings may soon die when cut, the eggs of aphids and red spider will not be destroyed, but will hatch in due course and the young pests will doubtless find their way to the fruit trees. The destruction of prunings is vitally important, also in orchards infested by scale insects, particularly by the San Jose scale.

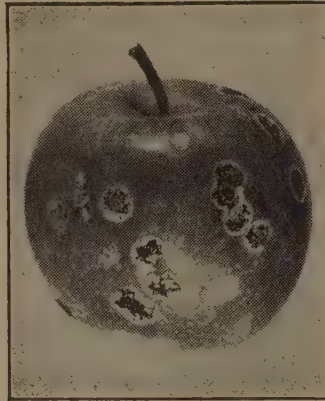
2. Attention to Fruit Cases.—Cases used in the transport of fruit almost invariably contains hibernating insect pests. Thus cases used for Apples, Pears and Quinces will contain cocoons of the codlin moth; those used for Peaches and Quinces in the Goulburn Valley will harbor Oriental Peach moth larvae. Sterilise the cases by immersion in boiling water to which caustic soda has been added. An economical source of heat for this would be the prunings. This measure has the added advantage of destroying any fungus spores which may be in the cases.

3. Attention to Packing Sheds.—Great numbers of codlin moth larvae hibernate in cracks and crevices in and around the packing sheds in Apple and Pear orchards. These should be sought out and destroyed. This is a suitable pastime for a wet day.

4. Scraping off the rough bark around the trunks of Apple trees, Pear trees and Quince trees will cause the death of numerous codlin moth larvae hibernating there and also prepare the trees for bandaging in the following spring.



An apple leaf affected with
Black Spot.



Granny Smith Apple affected with
Black Spot.

ATLANTIC BORDEAUX SPREADER

is the ideal two-purpose spray. Use in proportion of from $\frac{1}{2}$ to 1 gallon to 100 gallons of any compatible spray mixture. After emulsification with an equal quantity of water, Atlantic can be added directly to the prepared spray in the tank, but should be thoroughly mixed before use. Atlantic stabilises the mixture and improves the general quality of the spray. It can also be used for the control of scale and insect pests on citrus trees in the proportion of 1 gallon Atlantic to 50 gallons of water.

ATLANTIC WHITE SPRAYING OIL

Orchardists who prefer a miscible white oil are recommended to use Atlantic White Spraying Oil, for the control of Brown Olive Scale, San Jose Scale, Red Scale, etc. Atlantic White Oil is entirely free from moisture and ammonia and readily miscible with any water. A solution of 60 gallons of water to one gallon of Atlantic will enable you to control scale pests economically and safely.

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BLUESTONE FOR BORDEAUX FRUIT SPRAYS.

We have received from the Electrolytic Refining and Smelting Co. of Aust. Ltd., manufacturers of ESA Bluestone, a very interesting and attractive booklet, entitled "Better Yields by Spraying with ESA Bluestone." This book has been carefully compiled, and edited by an authority on spraying, and contains much valuable information regarding the preparation of Bordeaux and Burgundy mixtures. Bordeaux is the principle fungicide for fruit disease control, and in this booklet methods are described for the control of all fungus diseases which affect deciduous and vine fruits.

It is interesting to note that the Electrolytic Refining and Smelting Co. commenced production of ESA Bluestone in 1918, when there was an acute shortage of this material in Australia, and users were entirely dependent on the imported product. The company's chemists have made a careful study of the

requirements of the orchardist and vigneron, and ESA Bluestone is now available in the following grades:—

Mixed Crystals, packed in 5 cwt. casks and 1 cwt. cases; Fines, packed in 5 cwt. casks and 1 cwt. cases; Granulated (Snow), packed in 56 lb. cartons. The quality of the various grades in no way differs, and all grades are guaranteed to be not less than 99 per cent. pure.

The fine crystals and granulated bluestone are much more readily dissolved than the larger crystals, and are preferred by most orchardists for spraying purposes.

A copy of the booklet referred to above is available free on application to ESA Bluestone Agents, Messrs. Elder, Smith & Co. Ltd., who have offices in all the States' capital cities.

Oriental Peach Moth.

Success With Parasites in U.S.A.

The Oriental Peach moth is a serious pest in U.S.A., as it is in Australia.

The importance and distribution of the Oriental fruit moth (*Grapholitha molesta* Busck) in western New York from 1927 to 1932 are the primary considerations of a bulletin just to hand from the New York Experiment Station, Geneva, N.Y. By the end of 1931, practically all of the commercial Peach area of western New York was infested. Considerable injury to Apples has been noted and, generally speaking, Quinces are 100 per cent. infested.

The outlook in regard to Peach culture has undergone a decided improvement since the establishment of the parasite *Macrocentrus ancylovorus*. This parasite has taken a steadily increasing toll of the twig-infesting larvae since its introduction, the percentage of parasitism rising from 6.63 in 1928 to 25 in 1932.

Parasitism by indigenous species varied considerably from year to year, due chiefly to fluctuations in the abundance of *Cremastus minor* and *Glypta rufiscutellaris*. Coincident with the increasing parasitism by *M. ancylovorus* there was apparently a decrease in the population level of the fruit moth. In Niagara County the high point of damage was reached in 1929, when 59.89 per cent. of the crop was infested with an estimated population of 18,901 larvae per acre. In 1932 these estimates showed only 8,288 larvae per acre with 14.01 per cent. of the crop infested. This represents a reduction of 56.4 per cent. in the population per acre. It is believed that similar results may become apparent in the other infested counties, when the parasites become firmly established.

An account is given in the U.S. Bulletin referred to of the technique developed for the rearing of both hosts and parasites.

The Preparation of Bordeaux and Burgundy Mixtures.

There are three types of Bordeaux mixture which may be made:—

- (1) The Acid Bordeaux mixture,
 - (2) The Neutral Bordeaux mixture,
 - (3) The Alkaline Bordeaux mixture,
- according to the relative quantities of lime and bluestone used.

For 12 lbs. of bluestone or copper sulphate in solution, and provided that the quicklime is pure and freshly burnt:—

it will be acid with less than 2.022 lb. of lime.

it will be neutral with between 2.022 and 2.7 lb. of lime,

it will be alkaline with more than 2.7 lb. of lime.

The acid and neutral Bordeaux mixtures are greenish in color, and are both washed very readily off the tree in wet weather, whereas the alkaline Bordeaux (or the sky blue colored Bordeaux) will remain on the tree in spite of very wet conditions, and is the Bordeaux mixture which is in general use.

The formula in general use is the 6.4.40 or 12.8.80 formula. This is an alkaline Bordeaux with more lime than is actually required. However, as this is an accepted formula its preparation is given.

To prepare Bordeaux mixture 6.4.40 or 12.8.80:—

- (a) dissolve 12 lbs. of bluestone in 40 gallons of water in a barrel.
- (b) slake 8 lbs. of quicklime in another barrel by adding small quantities of water at a time. When slaked add water to bring up to 40 gallons. Stir well.

Pour the bluestone solution and the lime water simultaneously into the spray vat through a suitable sieve. The resulting Bordeaux should be a good sky blue color, and is ready for immediate use.

Stock solutions of bluestone, containing 1 lb. to 1 gallon of water should be made at regular periods throughout the spraying season, so as to save time in filling the spray pumps.

Alkaline Bordeaux also permits the addition of a casein spreader, the value of which is to increase wetting power and adherence. Casein spreader if added to an acid mixture would curdle.

[The foregoing is an extract from the booklet, "Better Yields by Spraying," issued by the Electrolytic Refining and Smelting Co., Port Kembla, N.S.W.]

Fruit Essential for Children.

The Safety First League of N.S.W., of which the Governor is Patron, and Mr. A. W. Hicks (Asst. Under Secretary of the Education Department) is president, has pointed out that the greatest defect in the diet of our children is its deficiency in "protective" foods.

Fruit Essential.

These "protective" foods comprise milk and leafy vegetables, which—together with fresh fruit—are absolutely essential to health at all ages. Their absence from the diet, says the league, prevents the proper development of the young and leads to early deterioration and ill-health in the adult.

Other essentials for children are suitable food, sufficient rest and sleep, plenty of sunlight and fresh air (both by day and night), proper clothing, clean habits, exercise and play (especially out of doors) and training discipline. * * *

The league points out that whereas few children suffer from insufficient food, much trouble is caused through unsuitable food. Hence the value of the "protective" foods—fruit and vegetables.

— THE — BAVE-U

Power Sprayer

— SINGLE ACTING MODEL —

This machine is thoroughly reliable and sturdy, and will supply two hoses at any desired pressure. It is moderately priced and represents the — best value on the market to-day. —

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300 C.P. Storm Lanterns for Packing Sheds from 50/-.

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All kinds of lighting plants; also mantles and generators, acetylene lamp and lanterns. Carbide sold.

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Kemico Odorless Closets, from £4/10/-.

T. W. SANDS, 372 Lonsdale Street, Melbourne, Lamp, Lighting Plants and Sanitary Specialist.

New South Wales News and Notes

Fruitgrowers' Federation of N.S.W. ★ ★ ★ Important Annual Conference

AT THE ANNUAL CONFERENCE of the Fruitgrowers' Federation of N.S.W., held at Sydney in June, many matters of vital importance to the industry were dealt with.

President's Report.

In opening the conference, the president (General J. Heane) referred favorably to the conference of plant pathologists, at Canberra, called to deal with various matters relating to fruit and plant prohibitions. Every effort had been made to improve the Mandarin position: the Federal Government favored a grant of £10,000, provided the State Government would provide a similar sum. The assistance granted by the Federal Government regarding Citrus export last season was appreciated. Regarding stabilisation and control, it would be unsafe to invest in any board the full powers under the present New South Wales Marketing of Primary Products Act. Nevertheless, legislation for a Citrus Export Control Board along the lines of the Dried Fruits Control Board, would be welcomed.

The conference was officially opened by the Minister for Agriculture, Hon. Hugh Main, M.L.A., who referred to various matters affecting the industry. There was grave danger of the spread of Fruit Fly through backyard orchards, and he suggested amending the orchard tax to charge 2/- per acre with a minimum of 10/-, allowing 50 per cent. reduction if paid in thirty-one days.

The debates were of a high standard, and it was pleasing to note that a broad national view was taken.

The chairman (General J. Heane) directed attention, when occasion demanded, to the necessity for the larger State-wide view to be taken rather than as representative of particular districts.

On another occasion, Mr. T. A. Tester, a member of the board, asked delegates to view the matters under discussion from the all-Australian viewpoint, recognising that only in this manner could the right perspective be obtained.

Subjects which evoked greatest discussion were those dealing with the many-sided marketing problems and the Fireblight embargo.

Regarding proposals for marketing control by legislation, divergent views were expressed. Delegates from the

Murrumbidgee Areas stated that they had had their full experience of controls, and would have nothing more to do with them. They submitted a resolution—

"That this meeting of fruit-growers is opposed to the statutory control of fresh fruits."

Mr. A. U. Tonking, M.L.A. (Orange) said the Primary Products Marketing Act, which gave power to primary industries on a majority vote to have control by legislation, was too drastic, as it completely vested the ownership of the goods under a board. This, in fact, had been proved ultra vires under the Constitution in relation to Interstate trade.

The conference evidently agreed with Mr. Tonking's contentions. However, he urged that limited powers of control be conferred when desired by producers "for specific purposes," and a resolution was finally adopted as follows (proposed by Mr. Ward, seconded by Mr. Connor):—

"That this conference insists that any control of the regulation of the marketing of fruit shall be retained by producers devoid of Government interference."

Mr. C. A. Holswich moved, Mr. Tribe seconded—

"That the coming board be instructed to submit proposals for the reorganisation of the Federation on lines that would enable the board to secure executive authority by Act of Parliament, such proposals to be submitted to growers at the earliest possible moment and a poll taken to determine the wishes of growers."

Mr. Holswich said such board should be appointed for specific purposes to control marketing, regulate grading and control agents and exports, but did not suggest polling. In particular the marketing of obviously inferior fruit should be prohibited.

Mr. G. G. Moss moved as an amendment—

"That the incoming board be instructed to submit proposals for the reorganisation of the Federation." (Thus deleting the latter portion of the resolutions submitted by Mr. Holswich.)

A keen debate followed, reasons being given for and against. On being

put to the vote, Mr. Moss's amendment was carried by 36 votes to 34.

Mr. F. B. Mackenzie (Kurrajong) then moved:—

"That it be an instruction from this conference to the board to appoint a committee of three Citrus growers to investigate and report to the board on:

(a) The position in regard to production, both present and prospective, and as to any material differences between the several districts as to relative productivity per acre, and the consequent effect on costs of production.

(b) The varieties, types and quality.

(c) The methods of marketing. "The committee to be required also to make recommendations as to the manner in which the position may be improved, and as to the form of organisation, if any, that should be instituted to effect such improvement.

"The expense of the committee to be borne by the board, and the committee to be given power to co-opt additional members if considered necessary."

Mr. Ward seconded. Carried.

N.Z. Embargo.

(See Report on Another Page.)

Grading Regulations. It was decided on the motion of Messrs. Ward and Connor to request the enforcement of grading and packing regulations, with the object of eliminating the very low-grade fruit, which depreciates market values.

Regarding export regulations, the conference decided, on the motion of Messrs. Hazelwood and Ray, in favor of Commonwealth Grading Regulations being in conformity to the standard of overseas competitors, and requesting the State Departments of Agriculture to gazette State regulations on similar lines.

On the motion of Messrs. Challis and Westbury it was decided—

"That the board discuss with the Department of Agriculture the desirability of the Apple and Pear grades of fruit sold in N.S.W. being made Special Standard and "D" grades, plain grade being eliminated."

It was suggested that "D" grade might be created for N.S.W., thus eliminating plain grades from the other States.

On the motion of Messrs. Herring and Kettle—

"Conference favor the regulation of fruit marketed in N.S.W. by

means of regulations affecting sizes, variety and grade, as recommended by means of representative growers' associations, also (motion, Messrs. Buchele and Butz), to recommend the establishment of a "Hail grade" for Apples and Pears."

Granny Smith Memorial. A proposal to erect a memorial to commemorate the Granny Smith Apple was approved, the board being authorised to spend £250 for this purpose.

Railway Matters. Messrs. Denniss and Howse attended on behalf of the Railways Department, and expressed appreciation for mutual improvements which had been brought about through conferences between the growers and the department.

Mr. Denniss stated, in reply to a request with reference to the reduction of freight on single cases, that the department would be prepared to carry 4-bushel cases at a flat rate of 9d., provided that this concession be used for the direct trade between producer and consumer, and that the concession would not apply to fruit consigned to or from the Sydney markets. Further consideration would be given to a proportionate reduction of the freight on 1½ and 2-bushel cases under similar conditions.

Various items on the agenda referring to railway matters were referred to the board. A hearty vote of thanks was conveyed to Messrs. Denniss and Howse.

Mr. Denniss stated that plans were drafted for the remodelling of the Darling Harbor railway yards. Forty new lights were shortly being installed.

City Markets. Mr. Willis J. Williams, Superintendent, City Markets, displayed plans for the market extensions, which were now to be gone on with. A cordial vote of thanks was accorded to Mr. Williams.

Trading Activities. Mr. H. E. Napier, previously manager of the New Zealand Fruitgrowers' Federation, detailed the trading activities of the N.Z. Federation, which had grown in a few years from £10,000 to £150,000. Mr. Napier was cordially thanked. Decided, on the motion of Messrs. Holswich and Robinson, to empower the board to engage in trading activities.

Marketing in Bags. Delegates expressed strong opposition to the marketing of fruit, particularly Oranges, in bags. Mr. Connor moved, Mr. Gordon seconded—

"That conference requests the transport of fruit in bags be prohibited in respect to any fruit exposed for sale in city markets."

As an amendment, Mr. Tester moved that the marketing of fruit in bags be prohibited. Seconded by Mr. Morrison. The amendment was carried.

Fruit Agents. Various matters affecting fruit agents were discussed. Conference resolved in favor of the duplicate docket system requiring an accurate record on official stationery of each

sale of fruit at the time of sale. Other items regarding agents were referred to the board.

Dried Tree Fruit Poll. Much discussion ranged around the resolution submitted by Mr. Connor, seconded by Mr. Holroyd—

"That this conference of growers protests against the Federation granting £100 to pay for the collection and canvassing of votes in the recent dried fruit poll."

The gravamen of the complaint was that the money granted by the Federation for the collection of votes had been used for securing the "Yes" vote. Several anomalies connected with the qualifications and voting were pointed out.

Mr. Tester and others justified the action of the board in the granting of the money for organising purposes. As far as he was concerned the organiser had been impartial. The motion was lost.

Orchard Registration. Decided to recommend that the minimum registration fee be 2/6, that one tree constitute an orchard, and the department be urged to make a special check of registrations to ensure the fee being paid on the correct acreage.

Fruit Fly. Delegates laid emphasis on the necessity for increased efforts for Fruit Fly control. The seriousness of the pest was emphasised. Resolutions were carried favoring a grant from the State Government, subsidised £1 for £1 by the Commonwealth. Other aspects of Fruit Fly control were referred to the board, including award for the best system of trapping and poisoning Fruit Flies; more drastic steps to prevent introduction and spreading of Fruit Fly into other districts, appointment of additional inspectors.

Northern District. On the motion of Messrs. Taylor and Martyn it was decided—

"That all that portion of the State of N.S.W. north from the Liverpool Range to the Queensland border, including the north-west and excluding the North Coast, comprise a sub-district of New England, and that the balance of the present northern sub-district comprise the sub-districts of Central Rivers and that this be incorporated in the rules and provision be made for the appointment of an additional board member."

The Financial System. A diversion was caused by the introduction of resolutions regarding an address before the conference of a representative of the Douglas Credit System. The appointment of a Royal Commission to enquire as to whether the present financial policy is beneficial or detrimental to primary industry; the effect of proposed restriction in production while millions in the world were starving. No one doubted the earnestness of these advocates of financial reform, but the conference apparently adopted the attitude

that these items were not relevant to the general procedure, and the various resolutions were negatived.

Trade With the East. A resolution by Mr. Herring, seconded by Mr. C. Smith, was referred to the board, namely the sending of a representative to the East, particularly India, to enquire into the possibility for extending the market for fresh fruit. The board was also asked to obtain information regarding the possibilities of export trade with Japan and China.

Federal Citrus Council. There was considerable discussion regarding the Federal Citrus Council, its constitution, and the matter of representation for N.S.W. The delegate stated that the actions of the Federal Citrus Council were in the nature of the tail wagging the dog.

After an explanation by the president, it was resolved: That the number of representatives from N.S.W. to the Federal Citrus Council be increased, and that representation on that council be fixed on a production basis.

Levy on Mandarins. On the motion of Messrs. Cleary and Nell, it was decided—

"That a protest be made against any attempt to impose a levy on Mandarins, as Mandarin growers did not benefit by Citrus export to the U.K., and had received no support."

Bond-Selling Companies. At the instance of Mr. Anthony, conference adopted a resolution opposing the planting of large areas of trees and plants by bond-selling companies.

Various other items were referred to the board, including attention to neglected orchards and roadside trees, enquiry re N.Z. Apple and Pear Export Guarantee, development of trade in fruit juices (particularly Orange wine), the prohibition of the marketing of immature table Grapes; enquiry into gas storage of pome fruits in relation to orchard and ships' storage, continuance of the subsidy on fertilisers, removal of duty on sulphate of ammonia and nitrate of soda, correct descriptions on bagged fertilisers, departmental examination of spraying materials, prize for best Codlin Moth control without use of arsenate of lead sprays, Government assistance to help fruitgrowers in destroying flying foxes, registration of nurserymen and seed merchants to guarantee the goods sold, compulsory fumigation of fruit and ornamental trees before despatch from nurseries, penalties on persons destroying or robbing beehives in fruitgrowing districts, admission of fruit into the Murrumbidgee Irrigation Areas where no danger would result, enquiry into high prices of spare parts for agricultural implements, engines, etc.

Office - Bearers. Office-bearers were elected as follows:—President, General Heane; Members of Board—A. S. Brown, A. E. Lillicrap (Central Coast

District), A. U. Tonking, E. Ray (Central Tablelands District), J. M. Hind, C. A. Holswich (Cumberland District), F. B. Mackenzie, R. T. Wood (Hawkesbury District), J. Hetherington, J. E. Ward (Irrigation Areas District), H. L. Anthony, A. J. Taylor (Northern District), T. A. Tester, A. E. Herring (Southern District).

The comprehensive report of the Secretary (Col. E. E. Herrod), which was adopted, dealt with the Board's activities re N.Z. embargo, export of Oranges, the Mandarin situation, co-operative bud selection society, Apple and Pear export, improved grading regulations desired, sulphate of ammonia, equalisation scheme and marketing control, dried fruits legislation, Ohanez Grape Conference, etc.

THE MURRUMBIDGEE IRRIGATION AREA.

THE BURRINJUCK DAM is distant from Berembd Weir about 240 miles by river and 103 in a direct line. Maximum height of retaining wall 240 ft. Covers 12,780 acres. Capacity is 771,641 acre feet, approximately 211,000,000,000 gallons, equal to 942,000,000 tons. Catchment area is 5,000 square miles, backs up the Murrumbidgee River for 41 miles, Goodradigbee River for 15 miles and the Yass River for 22 miles.

Length of Main Canal — Canal from Berembd Weir to Yanco regulator is 46 miles.

Total length of main canals is 142 miles; supply channels, 667 miles, and of drainage channels, 744 miles.

Area Under Fruit.

The approximate area under fruit in the irrigation district is:—Citrus, 5,880 acres; deciduous, 7,040, and vines, 6,388 acres. Total area, 19,308 acres.

Number of Farms Held.

Yanco Irrigation Area, 790 farms, covering 131,216 acres.

Mirrool Irrigation Area, 1,106 farms, covering 106,120 acres.

FRUIT MARKETING IN N.S.W.

Citrus Growers and Wholesalers Unite.

After the close of the recent conference of the Fruitgrowers' Federation in Sydney, representative Citrus growers from the main producing centres of the State held a conference with members of the Fruit Merchants' Association. It was decided to form an association of growers and wholesalers, with the objects of improving the market for Citrus fruits, the collection of production statistics, marketing research, improvement of grades and packs, and advertising to increase fruit consumption.

FRUIT FLY IN N.S.W.

Oranges (Other than Valencia) on the M.I.A. to be Removed by September 15.

A proclamation has been gazetted requiring all owners and occupiers of land on the Murrumbidgee Irrigation Area to remove all Grape-fruit (Pomelos), Limes, Passion-fruit, Mandarins, Loquats, Comquats, Lemons, Citrons, and Oranges other than the main crop, late Valencia Oranges from the trees not later than September 15, 1934, in order to prevent the spread of Fruit Fly.

The proclamation applies to not only commercial growers, but also to owners of one or more trees. The fruit may be stored in sheds until it is disposed of, but steps will be taken to remove the fruit from trees on any property where the proclamation has not been complied with.

It is hoped to minimise the infection of stone fruits in this way, as there will be a period of one month to six weeks between the time the above fruit is removed and the time the Valencia reach maturity. This method of prevention is based on the fact that when the fruit is immature the oil in the skin acts as an ovicide and kills a great percentage of the eggs.

GRANNY SMITH MEMORIAL.

At the recent annual conference of the N.S.W. Fruitgrowers' Federation, Mr. E. Ray, Kelso moved:—

"That favorable consideration be given to the claims of the Granny Smith Apple Memorial Committee in its endeavour to erect a permanent memorial near the site of the original tree."

Mr. Ray said that the local seedling had now become the most popular Apple in Australia, and was world famous. He gave many interesting details, including the fact that his mother had played under the original tree at Eastwood when ten years of age. That was 77 years ago.

The motion was carried.

Mr. Savage recommended that the memorial take the form of a research scholarship.

Mr. Walsh, on behalf of the Eastwood Memorial Committee, suggested a tablet being erected on the roadside near to where the tree was growing. Other suggestions favored making the allotment where the tree was found into a playground with a suitable monument to be erected.

It was finally decided, on the motion of Mr. H. L. Anthony, seconded by Mr. C. Smith, that the matter of the Granny Smith Memorial be referred to the board, which is authorised to spend up to £200 to acquire the land, and £50 for the erection of a memorial.

CITRUS NEWS AND NOTES.

New South Wales.

Early in July weather conditions were adverse in coastal districts; rain and some frosts.

Large supplies of good quality Navels coming forward, but demand poor and prices low: quantities now being exported from Wyong district.

Valencias coloring, but the size of a large proportion of the fruit is not satisfactory.

Only small quantities of Common Oranges being marketed. In some groves matured Silettas are falling freely. Several small consignments of Joppas were forwarded to the English market from the Kurrajong district.

The demand for Lemons is restricted, and supplies are accumulating in a number of districts.

Mandarins generally are of good quality, but harvesting is proceeding slowly owing to low prices being received for this fruit.

The Grape-fruit crops in the Wyong district are good, but the size of the fruit is mostly small.

It is expected that recent rains over the Murrumbidgee Irrigation Area will assist the development of the heavy Valencia crop.

N.S.W. Crop Prospects.

Prospects for the coming crop are so far satisfactory, according to the latest report by the Department of Agriculture.

Bud development of Apples generally is good. With Pears the bud show is said to be medium to light on trees in the Orange district.

In the Cherry-growing centres bud indications are favorable; other stone fruits are mostly satisfactory.

In the Young district Prune trees that blossomed in the autumn are now developing plenty of buds, and providing these set fruit the crop should be about normal.

Peach trees (early varieties) are commencing to bloom in the Parramatta district, but the blossom is shedding freely.

Bananas. — The cold weather during June retarded growth, and fruit matured slowly.

In the Murwillumbah and Tweed Heads districts a marked fall in production, particularly from old plantations, expected during July. Medium supplies of fruit likely from other centres.

Pineapples.—Marketing of fruit of good average size is in full swing in the Terranora centre, Tweed River. In the Lismore district good crops of rough-leaf varieties maturing; "smooth-leaf" light but promise good cuttings during spring. In warmer weather, small quantities expected in the Richmond River district.

CANNED FRUITS

Items of Interest.

LEETON CANNERY.

Growers to Take Over in Three Years.

Cool Stores to be Erected.

FOR SOME TIME past negotiations have been proceeding with regard to the future operations at Leeton Cannery.

During July a large meeting of cannery suppliers at Leeton agreed unanimously to support the proposal by directors of the Leeton Fruit Growers' Co-operative Society for the taking over of the Leeton Cannery and cold storage plant. Under the agreement growers are to take over the cannery through their co-operative companies at the end of three years. The water commission will continue to process fruit for the next three years, paying the prices fixed by the Sugar Concession Committee, as share capital. Five per cent. will be deducted from each grower's cheque and paid into a fund.

An advisory committee, possessing full power to acquire all information regarding the cannery operations, is to operate during the next three years, i.e., until the growers take over the cannery.

A new company, to be known as "the cannery company," is to be formed for the taking over of the cannery and cold storage. Until any remaining Government debt is liquidated (after the cannery is taken over) the Government will require representation on the directorate.

The written down capital cost of the cannery is shown at £68,384. During the ensuing three years this amount will be further written down for depreciation.

Cold storage facilities will be provided and operated by commission for the next three fruit seasons.

CANNED FRUIT IN ENGLAND.

The following is an extract from the report of the Trade Commissioner in London received by the general manager, Sth. Aust. Government Produce Department (Mr. G. A. W. Pope)—

There has been an active demand for Australian both on spot and for shipment, and the new season's pack is, it is stated, practically cleared. Prices have been moderate, and the board recently advanced their limits by 4½d. on 2½'s and 3d. on 1's.—c.i.f. Limits are as under:—

	Peaches.		Apricots.		Pears.	
	2½'s	1's	2½'s	1's	2½'s	1's
Choice	6/6	4/6	7/-	4/9	7/3	5/3
Standard	6/-	4/3	6/6	4/6	6/9	5/-
Seconds	5/7½	—	6/1½	—	6/4½	—

Californian Prospects.

Californian Pears and Peaches are exhausted so far as shipment is concerned, and any spot stocks are firmly held.

Latest advices regarding U.S.A. show that Apricots are likely to be the smallest crop for many years. Flowering was irregular, and further setback has been caused by the effects of brown and green rot. On May 1 the estimate was quoted as 39 per cent., as against 71 per cent. last year, when the crop amounted to 220,000 tons. The quality is expected to be better than last year, with a larger percentage of large sizes. Cannery expect to pack about the same as 1933, and the production of dried is given as likely to be 18,000 tons.

Peaches, both Clingstone and Freestone, give promise of yields about in line with recent years. Clingstone—The total crop last year was 320,000 tons, of which a substantial quantity was not harvested. Freestone—Crop 1933, 170,000 tons. Pears—the Californian crop will be about 5 per cent. less than last year, when the crop amounted to approximately 200,000 tons.

CANNED FRUITS IN BRITAIN.

Increase of Duty Sought.

Reports from London indicate that the British fruit canneries are seeking to substantially increase the duties on foreign canned fruits, particularly Pears, Peaches and Apricots. It is understood that the increase sought will make the duty prevalent at 3½d. per tin, at the port of entry, which would mean an increase in the price of at least 4d. per tin in the retail price.

It is also understood that many grocers have laid a protest against this proposal.

CITRUS TREES

Trees grown from buds supplied by Co-operative Bud Selection Society, N.S.W., £4/10/- per 100. Washington Navel and Late Valencia only. All other varieties at £4 per 100. A. T. EYLES, The leading Citrus Grower, Fairmount Nurseries, Rydalmere, N.S.W. - Phone UW 9037.

AUSTRALIAN CANNED FRUITS.

That immediate prospects for the canned fruits industry were brighter was stated early in July by Mr. R. H. Gent, chairman of directors of the Kyabram Cannery: the old stocks would be cleared before next season's crop, and probably all the fruit supplied by Kyabram growers would be accepted. Exports to U.K. were heavier, but the opening prices were unremunerative. Reduced prices increased consumption.

CANNING PEACHES IN CALIFORNIA.

Thirty Dollars a Ton.

At a meeting of the directors of the California Peach Growers' Associations, held on June 5, at San Francisco, the price of thirty dollars per ton was named on the association's tonnage of No. 1 Cling Peaches, and on such quantity as the control committees may determine shall be canned under the proposed 1934 Peach agreement.

CANNED FRUITS EXPORTS.

The Canned Fruits Control Board has issued a statement setting out particulars of exports of canned fruits from Australia to various destinations from the commencement of the season (January 1) to June 30, 1934. The following figures are given (in dozen tins). Total export, 1,590,888 (30 oz.), 24,793 (21 oz.), 522,134 (16 oz.). This was made up of Apricots 191,485 (30 oz.), 520 (21 oz.), 74,985 (16 oz.); Peaches 852,910 (30 oz.), 9,100 (21 oz.), 272,969 (16 oz.); Pears 467,510 (30 oz.), 162,702 (16 oz.); Pineapples 78,933 (30 oz.), 15,173 (21 oz.), 11,478 (16 oz.). The heaviest export was to U.K., being 1,517,160 (30 oz.), 1,500 (21 oz.), 476,209 (16 oz.). Additional quantities (in dozen tins):—10 oz. Apricots, 272 to East; Peaches, 1,724 to U.K., 56 to East, 4 to miscellaneous; Pears, 572 to East, 8 to miscellaneous. 18 oz.: Apricots, 1,972 to Canada; Peaches, 512 to East, 5,485 to Canada; Pears, 350 to Canada; 104 oz.: Apricots, 748 to Canada; Peaches, 1,573 to Canada; Pineapples, 170 to U.K., 5 to N.Z., 2,711 to Canada.

CANNED FRUIT IN U.K.

The Canned Fruits Control Board recently decided to increase the minimum prices, c.i.f., British port, for No. 2½'s canned Apricots, Peaches and Pears of all grades by threepence (3d.) per doz. as from 26/6/34.

Merbein.—There were eight candidates standing for election of the committeemen of the Merbein Dried Fruits Union: the retiring members of the committee, Messrs. E. J. Casey, A. J. Chislett, G. J. Hyndman, A. Rawlings, W. H. Tickell and R. M. Voullaire, junr., were re-elected.

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APPLE AND CITRUS PACKING
CHARTS ARE AVAILABLE FREE
ON APPLICATION. GERRARD SERVICE

FROST PREVENTION AND ORCHARD HEATING.

THERE was a large attendance at a meeting held at Harcourt in July to hear details of frost prevention methods. Mr. J. H. Ely presided.

Mr. E. E. Pescott, F.L.S., Pomologist, Department of Agriculture, said that the commonly used form of frost prevention was that of direct heating. In California this method had been practised for many years with success.

Mr. J. L. Provan, B.Agr.Sc., Horticultural Research Officer, said that the principal damage to deciduous trees was in the early spring in the destruction of flowers or young fruit. Buds of deciduous trees were extremely susceptible to damage during the period of from 24 to 48 hours before they opened. Petals were folded, but the principal parts of the flower, e.g., style, ovary and stamens, were growing rapidly, and were exceedingly tender. It was possible for buds to be injured by temperatures as high as 30 degrees F. The buds of deciduous trees opened gradually, and fortunately all the flowers were not open at the same time, so that a complete crop was seldom lost. The losses from frost might however, be much higher than growers realised.

The blooming periods for fruit grown in the Harcourt district are as under:—

Apples.—Full Bloom: Second to third week in October. Therefore, frosts in late September and early October are a menace.

Pears.—Early blooming varieties, such as Keiffers and Howell, and others in first week in October.

European Plums.—Third to fourth week in September.

With Citrus fruits frost damage in winter and spring harmed not only the fruit but also the fruit-bearing wood, and the framework of the trees. Mr. Provan urged growers to unitedly attack the frost menace.

Mr. H. Barkley, Assistant Director, Meteorological Bureau, gave technical information showing the processes of

frost occurrence — Stagnant air on a still, clear night and colder soil until the lower air becomes colder than the layers ten to thirty feet above, then sets in a slow drift of the coldest air near the ground to the lowest level in the locality. So limited in depth are these drifts that the upper portions of a tree may be saved, while the lower suffer severe frost damage. It is the shallow depth of the cold mantle of air and the presence of warm air immediately above which makes preventive measures possible.

When the lower air is heated it expands and goes upward until it meets air as warm and light as itself.

The ascending warm air, which stops at its own temperature level, in the inversion gradually extends the warmer air mass downwards, till it envelops the whole orchard.

Probably safe low temperature limits for different trees:—

Kind of Fruit.	Buds Showing	In Full Bloom.	Fruit Setting.
	Color.		
Apples . . .	27	29	30
Apricots . . .	30	31	32
Almonds . . .	28	30	31
Blackberries . . .	28	28	28
Cherries . . .	25	28	30
Grapes	31	32	32
Oranges	30	30	—
Lemons	—	32	30
Pears	28	29	30
Peaches	25	28	30
Plums	30	31	31
Prunes	30	31	31
Raspberries . .	28	28	28
Strawberries .	28	28	28

Three essentials to frost formation are—(1) Clear skies, facilitating loss of heat by radiation. (2) Low humidity, placing the dew point below freezing (32 deg. F.). (3) Quiet conditions, permitting the settling of the cold, dense air to the lowest levels.

Mr. W. A. Turner, representing the Shell Co. of Australia, said there were three general principles used in frost protection: (1) Conserving heat. (2)

Mixing or stirring the air, and (3) Adding heat, principally the last mentioned. In California three and a half million heaters were in use. In England success was attained by using 35 heaters per acre, raising the temperature three degrees. Success had followed the use of orchard heaters at Mildura and Wandin. At Lights Pass, South Australia, experiments were conducted on Apricots on the property of Mr. P. B. Boehm. The heated area was definitely saved from frost damage, whereas other areas in the same district suffered severely.

The heaters were of the five-quart bucket type, and burnt for four hours on one gallon of oil or 0.25 gallons per hour.

Mr. W. Eagle, Junr., of Harcourt, stated he had been carrying out experiments on a flat portion of his orchard, near the bottom of which is a wide and shallow valley. All the low-lying parts of this valley had suffered frequently from frosts. Growers lit wood fires to prevent frost damage, but this involved enormous labor. The trees were placed at intervals of twenty-one feet apart, so that there are about 100 trees to the acre. The heated area was square, thus comprising ten rows. Five rows of heaters being placed as far away from the trees as possible, i.e., mid-way between four trees. He urged growers to make a concerted effort to combat frost damage. For an isolated acre fifty heaters were required, but should the whole valley go in for orchard heating only about half the number were required. Oil heaters were best, and he thanked the Shell Company for their assistance in his investigations.

Mr. J. A. Egan, Kerang, said he had had success with solid fuel heaters, but he believed oil heaters were better.

Manual of Electric Pumping. — The State Electricity Commission of Victoria has issued a valuable illustrated booklet dealing with the varied phases of electric pumping. This is indeed a useful guide for all interested in securing the maximum efficiency from electric power.

Fruit Trees of Outstanding Quality

True to name, healthy and well-rooted. Citrus trees in large quantity—
Budding Wood supplied by the Bud Selection Society of N.S.W.—
Worked on Lemon, Sweet Orange, and Trifoliata Stock.

LARGE QUANTITY OF GRAFTED PECAN NUTS OF 12 VARIETIES FOR SALE THIS SEASON.
CATALOGUE FREE ON APPLICATION.

ESTABLISHED 1901.

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Pennant Hills Road, CARLINGFORD, New South Wales Phone: Epping 96

VICTORIA — Association Reports . . . Items of Interest

Sugar Agreement and the Berry Growers

—*—*—*

FAILURE OF PRICE FIXING.

—*—*—*

"Berry Growers Facing Dire Financial Disaster."

Mr. H. H. Henderson, hon. secretary of the Silvan (Vic.) Fruitgrowers' Association, writes to the "Fruit World."

"I am sending you herewith copy of article which I recently compiled, setting out the disabilities under which the berry industry labors because of the sugar burden:—

"Briefly,—we are informed that we cannot produce berries as economically as Tasmania: that it would be better to get out of the industry before we are crushed out; that berry growing is Tasmania's birthright, and we must reduce production to admit of that State coming into its own, all of which I refute.

"The Sugar Agreement has brought us to penurious conditions, and all the warnings in the "Fruit World" in the years that have gone are scarce if ever remembered by the average grower."

The article referred to by Mr. Henderson was contributed to the "Lilydale Express," and extracts are as follows:—

The average annual sugar concession of approximately £18,000 during the past three seasons to the berry industry has resulted in dire financial disaster to Victorian growers.

From 1925 to 1931 the sugar industry paid an annual concession of £300,000 (approx.) to processors in the form of rebates. This was an unconditional domestic rebate, the benefits of which to the berry industry was indisputable.

Succeeding that arrangement, a committee was appointed and entrusted with the disbursement of £315,000 towards assisting the industry. By October, 1932, however, the Sugar Agreement was amended, and the amount of the concession fell to £200,000 per annum. This present 1931-36 agreement is conditional. Manufacturers, to obtain the rebate, must declare that no less than the minimum prices prescribed by the committee have been paid for the fruit processed. Though designed to protect the producer, Victorian berry growers, have suffered irreparable loss.

In Victoria there are approximately 4,000 people dependent on berry production: the normal average production is

over 940 tons (Strawberries 356 tons).

Tasmania, however, eclipses Victoria in the total production of berry fruits, but is principally concerned with Raspberries and Currants.

Victorian Strawberry prices, under the 1925-31 agreement, averaged 6½d. per lb. wholesale, and 9d. retail, or a total estimated value of £24,600 per annum. Under the 1931-36 agreement the average price for both wholesale and retail lots fell this season to 3d. per lb. or a total annual value of approximately £9,968.

Strawberry growers are therefore losing over £14,600 per annum. But, that is only part of the tale, as Logan and other berries are quite as adversely affected.

To be exact, there were two prices—3d. jam and 3½d. canning—the former, however, becoming the maximum, though the pack is recognised as that which commands the higher price. The same price ruled for the 1931 season, while that for Peaches was £4 per ton higher than the average value. Truly an amazing position, this, when one section of growers benefits, and the other cannot possibly recover the bare out-of-pocket costs of production.

Growers appreciate the fairness of a few processing firms who paid a half-penny higher than the minimum, but it is impossible for them to recover the voluntary additional cost owing to the major factories' control of prices. The premise, therefore, of the F.I.S.C. that the minimum price by no means represents the maximum obtainable, is unworkable in practice. It is absurd, for no trading company can follow this principle indefinitely, nor with impunity.

Various Interests Summarised.

(1) The fixation of a minimum price for berries produced in Victoria has not benefited the sugar industry. It has been a distinct loss, for the bulk has been sold and used as fresh fruit on the open market. Just what that loss means is represented by 60 per cent. sugar to 40 per cent. fruit in the manufactured ar-

ticle. (2) The processor paying a higher rate than the minimum is penalised. (3) The consumer receives no encouragement through the concession. (4) The grower produces at a loss, while the manufacturer is permitted to regulate prices ad lib.

So the sugar concession agreement earns the growers' opprobrium, and compels him to appeal for the absolute abandonment of price fixing. So far as Victoria is concerned, a satisfactory method of utilising the concession, and one that would benefit the various interests, can be submitted. There is, therefore, no occasion warranting the sacrifice of the Victorian berry industry on the altar of business.

Victorian Berry Growers

Sugar Control Condemned at Annual Conference.

AT the annual conference of the United Berry Growers, held at Silvan, on July 26, Mr. W. T. Jeeves presiding, severe dissatisfaction was expressed with the operations of the Fruit Industry Sugar Concession Committee. Victoria, it was stated, was being sacrificed to Tasmania. The fixing of unduly low prices by this committee had given the public a wrong impression, and all prices were forced down. Sales through the Railways Department were reduced owing to the publicity regarding "cheap" fruit.

Resolutions were carried as follows—

That all negotiations for fruit available for sale be received only through branches of the United Berry Growers' Association, and not individually, as the latter method tends toward confusion, allocations for sale of berries to be received by branch secretaries, after they have forwarded particulars to individual members.

That in view of the fact that the term of office of the Sugar Concessions Committee expires in August, the association is not satisfied with the present representative for jam fruits, and desire a new representative for this office only.

That the Sugar Concession Committee be asked not to make public the factory prices fixed for berry fruits.

That this conference agrees that the only solution berry growers have for the problem of protecting their industry is the appointment of a control board, with powers to regulate areas put under cultivation for berry fruits, fix prices and control marketing.

VICTORIAN FRUIT MARKET- ING ASSOCIATION.

AT the monthly meeting of the executive of the V.F.M.A., on July 27, Mr. A. S. Harrison presiding, there were also present Messrs. K. Eagle, G. Douglas, J. H. Lang, F. Moore, W. A. Thiele, J. W. Bailey, W. H. Carne, W. P. Hutchinson, J. B. Mills, C. Parnham, F. R. Mellor, F. Cave, J. W. Barker, J. M. Ward, E. Meeking, and the secretary, R. E. Boardman.

Apologies were received from Messrs. J. J. Tully, W. A. Webb, E. I. Lawford and C. H. Jost.

Empire Producers' Conference. Mr. Mills, in tabling report from Mr. G. W. Brown, said it was the most important piece of work in the history of the Australian fruit industry: it was necessary to consider matters not only from an Australian but an Empire point of view. New Zealand would be consulting with Australia re grades, varieties and quantities: there would probably be a check to plantings in Sth. Africa. Australia could assist by standardising the export packages and adopting the grade names for Apples, i.e., Extra Fancy, Fancy, and "C" grade.

Regarding the Government grant of £125,000 for 1934 it was decided to ask that the distribution be left to the States in consultation with the leading export associations: further that the Federal Government be requested to set aside a sum to compensate growers in the destruction or working over of unwanted varieties.

Mr. Cave reported the success of meetings re improvements in local fruit marketing. The meeting expressed pleasure at this satisfactory development.

Amendments to the constitution were submitted and approved.

There was considerable discussion arising out of reports from London regarding the immaturity of Apples, particularly Jonathans. It was decided to deal with this and other matters prior to the Interstate conference. A resolution reaffirming the desirability of using the "Canadian standard" box for Apples was carried.

Correspondence from the Australian Apple and Pear Export Council and the Department of Commerce dealt with fruit exports to U.K., French quotas, advertising fruit in U.K., fruit for Bristol, weight of fruit in cases, fruit for Netherland East Indies. A complaint from Tyabb regarding undue severity in inspecting Plums for export was referred to the Department of Agriculture.

Proposed alterations to the export grading regulations, submitted by the N.S.W. Apple and Pear Export Association, were circulated to members of the executive.

Welcome to Mr. Brown. At the instance of Mr. G. Douglas, it was decided to form a committee, consisting

of Messrs. Mills, Harrison, Parnham, Cave and the secretary, to organise a function to "welcome home" Mr. G. W. Brown.

Mr. H. S. Tainton, of Forest Hill, was elected a new member.

SOFT FRUITS AND SUGAR PRICES.

Horsham Growers Seek Better Conditions.

GROWERS of Apricots, Plums and Pears for canning met at Riverside (near Horsham) on July 23 in conference with Mr. A. R. Townsend, chairman of the Fruit Industry Sugar Concession Committee. Mr. J. Macdonald presided.

Mr. T. F. Brown said that growers were asking:

(1) That prices be fixed not later than October each year; (2) that the prices be fixed at the metropolitan factories;

FRUITGROWERS' RELIEF.

£36,000 Distributed in Victoria.

Victoria has distributed its share of the 1933 Federal Relief Grant,—£36,321: 341 growers applied for relief, and the claims of 309 had been met.

(3) that prices should not discriminate between fruit for jam and for canning; (4) that minimum prices be fixed for next year and for three years as follow:—Apricots, £9/6/8 a ton at the factory; Pears, £9 to £10; Plums and Quinces, £7. The growers wanted a fixed price so that they could have confidence in the future.

In reply, Mr. Townsend said he realised the problems of delivery of fruit from Horsham, and would consult his colleagues: he favored fixing the prices in October.

East Burwood.—At the annual meeting of the East Burwood Fruitgrowers' Co-operative Association Ltd., held on July 12, Mr. G. Mock presiding, the following office-bearers were elected:—President, Mr. G. Mock; vice-presidents, Messrs. E. J. Crittenden and C. W. S. Fankhauser; delegates to Southern Growers' Association, Messrs. G. Mock, E. J. Crittenden, M. Brown, C. W. S. Fankhauser, J. H. Tainton, W. R. Tainton. Delegate to Chamber of Agriculture, Cr. F. W. Fankhauser; delegates Farmers' Convention, Messrs. J. Tainton, E. Crittenden, F. G. Beet and W. R. Tainton; secretary, G. C. Karnaghan, Blackburn-road, Blackburn; treasurer, J. H. Tainton.

PANTON HILL FRUITGROWERS.

Complaint of Inadequate Accommodation At Victoria Markets.

There was a large attendance at the annual meeting of the Panton Hill Fruitgrowers' Association, on July 5. The annual report by the Secretary, Mr. C. T. Harris, referred favorably to the horticultural show, on March 19, which had the possibility of equalling any show in the State. The aim was to assist in the production of good fruit,—so essential for export and local markets. The association has protested against the lack of accommodation at the Victoria Markets, and the method of allotting stands, especially that known as the "green ticket" preference. Mr. Minns (Market Supt.) had visited the district, and explained that the "green ticket" preference system was adopted at the request of growers' associations. The report was adopted, and the secretary thanked.

Mr. A. Duff stated that the lack of accommodation at the Victoria Market was extremely serious. The Secretary read a report from "The Patch," stating that district primary producers were indignant at the action of market officials in moving growers from the Peel-street section, and that growers declared that conditions for marketing were decidedly inadequate.

The seriousness of the ravages of the Oriental Peach Moth in certain Victorian districts was mentioned, and the necessity for taking precautions to prevent the introduction of the pest. The advisability of fumigation of second-hand cases obtained at the markets was debated.

Doncaster.—At the June meeting of the Doncaster Fruitgrowers' Association, the action of the secretary in forwarding affiliation fee of £10 to the Southern Fruitgrowers' Association was endorsed. Motions were carried favoring Governmental research into Apple and Pear stocks, and supporting the efforts to secure a fertiliser subsidy of 15/- per ton. The Government was thanked for granting the bounty last year. The meeting favored having the stands in Victoria Market defined by a distinct dividing line.

Tyabb.—The Tyabb Co-operative Trading and Cool Stores Ltd. is operating actively on behalf of local growers. The company conducts cool storage and fruit packing, has a shipping department and a trading department for supplying orchardists' and farm requisites, cases, fertilisers, hardware, tools and implements, motor requisites, tyres, lubricating oils, timber, grain, fodder, etc. Their London agents are Messrs. C. F. Brake & Co. This district is noted for the production of high-quality Apples.

Kiewa Valley Orchard.**Apples and Plums Specialised.**

At the Kiewa Valley Orchards, Kiewa, N.E. Victoria, 100 acres are under fruit: 60 acres Plums and 40 acres Apples. The Plums are mainly Japanese varieties: Santa Rosa, Rubio, Formosa, Balena, etc. The principal outlet is to factories, at prices which are deemed to be satisfactory: £9 per ton was paid last season.

The Apple varieties are principally Granny Smith and Lalla (Red Delicious). The Apples are all exported, and the manager, Mr. W. H. Grant, states that returns have been good. Prices averaged 4/9 per case naked at the tree.

The whole of the Kiewa Valley orchards are served by irrigation,—from the Kiewa River, and big dams. The Buzacott irrigation system has been installed: water is supplied overhead by sprinklers.

There is a cool store with a capacity of 4,000 cases on the property.

Previously the Apple varieties at this orchard included a large acreage of King Davids. These have been worked over to Granny Smith and Lalla: these are now coming into bearing nicely, of the 4,000 original Apple trees, only 371 are not yet re-worked, and these remain as

Doncaster. — At a large meeting of growers during July, Mr. W. A. Thiele, presiding, an address on the proposed "Victoria Mark" scheme was given by Mr. F. Cave. It was generally recognised that the time had come for a very earnest effort to be made to improve local marketing.

FIELD DAY AT HARCOURT.**Top Working to be Demonstrated.**

A FIELD DAY with exceptionally interesting features is being organised at Harcourt on August 21. The chairman of the Field Day Committee is Mr. W. Eagle, Junr.

Demonstrations in the working over of Apple varieties will be given by Messrs. F. J. Greatorex and J. Thomlinson, of the Department of Agriculture, and in the evening there will be an illustrated lantern lecture by Mr. E. E. Pescott, F.L.S., Pomologist, on the same subject.

Tyabb.—Mr. Hugh Willoughby presided over a meeting of Peninsula growers during July when the new "Victoria

SOUTHERN FRUITGROWERS' ASSOCIATION.

Over one hundred growers attended the annual meeting of the Southern Fruitgrowers' Association, on July 5. Mr. W. A. Thiele, president, spoke favorably of the spray research work being carried out on a three-years' basis at Mr. Leber's orchard. The selling of large fruit by number instead of weight was preferred. Control of markets by marketing boards was opposed. Much was being done to improve matters at the Victoria Market.

Addresses were given by Mr. G. B. Minns, re Victoria Market; Mr. F. Cave, re improvements in local marketing in selling fruit according to grade and adopting the "Victoria Mark" for highest quality; Mr. S. Fish, M.A.G.Sc., re research work on Summer Spot on Pears.

Resolutions were carried requesting the Federal Government to renew the subsidy of 15/- per ton on fertilisers: that the State Government enact legislation for better control of neglected orchards: that roadside fruit sellers be licensed: that the Government conduct research work on Apple and Pear stocks.

Office-bearers were re-elected — President, Mr. W. A. Thiele, Past President, Mr. L. Pepperell; Executive: Messrs. F. G. Beet, F. C. Pyke, V. Lawford, O. White, R. M. Finlay, G. F. Fankhauser; Secretary and Treasurer, J. W. Aspinall.

NEW COMPANIES.**Melbourne.**

KALA RAMA PTY. LTD., orchardists, vignerons, fruiterers, etc. Capital: £5,000 in £1 shares. Directors: James William Lindner and John Clugston Lindner.

F.K. DRIED FRUITS & PRODUCE CO. LTD. Capital: £2,000 in £1 shares. Subscribers: John Keith Kiddle, Irene Alice Kiddle, and Charles Sidney Fead.

THE LARGER VIEW!**Market Research and Advertising.**

The fruitgrower is in the same category as the average wholesale manufacturer. But, here's the difference. Manufacturers know what quantity to produce for reasonable market absorption: advertising is always reckoned among the costings.

Fruitgrowers in the several States need a comprehensive census of trees and production: plus market research as regards normal consumptive powers. Plus advertising to increase the demand for fruit.

South Australia is moving to secure uniform Federal Legislation for the fixation of wine Grape prices whether for export or home consumption.



Santa Rosa Plums in blossom at Kiewa Valley Orchards, Kiewa, Victoria.

King David. The re-working was stopped owing to the polystictus disease. Mr. Grant has expressed great interest in the new system of re-working, as described and illustrated in the "Fruit World."

Present appearances are in favor of good crops next season.

Gaol for Fruit Stealing.—Jack Williams, George Cunningham and Cornelius Cunningham were each sentenced to a month's imprisonment at the Mildura Court on July 13 for having stolen 13 dozen oranges from the orchard of Mr. E. T. Henderson.

Mark" scheme was explained by Messrs. F. Cave, W. P. Mair, F. G. Beet, G. McDonald and R. E. Boardman. A resolution was unanimously carried supporting the proposals.

GOULBURN VALLEY.

Mr. W. Young, who is at present on a trip abroad, has been re-elected president of the Ardmona Fruitgrowers' Association. Other officers elected were: —Vice-presidents, Messrs. H. E. Pickworth and W. J. Pearson; committee, Messrs. P. A. Pyke, V. R. McNab and J. Pearson; secretary, Mr. S. P. Cornish; auditor, Mr. J. D. Simson.

SOUTH AUSTRALIA

Mid-Murray Notes

(By Our Special Correspondent.)

RENMARK, 18/7/34.

Cover Crops.

IN SPITE OF THE FACT that very little rain has fallen this winter, cover crops have come on remarkably well; of course, they are not as good as they might be, but comparisons between Peas and Beans have been very enlightening, from many angles. On one block, planted at the same time with alternate rows of Peas and Beans at the end of March, having had only one irrigation, show the Peas now in full flower and ready to plough under, while the Beans, although still growing well on good soil, are somewhat stunted on poor soil, and show no signs of flowering. On another block, where the Beans were planted early in March,—having had two irrigations, — they have made splendid growth, and are now flowering and fully ready to be ploughed under. There is another factor regarding the growth of cover crops worth considering, and that is, whether it pays to put in superphos-

Cover Crops, Relative Merits of Peas and Beans, Value of Super—Tests with Potash—Working Bee for Disabled "Digger"—Deep or Shallow Soil Cultivation?—Pruning Competitions.

phate with the crop, and how much is an adequate dressing. Observations made over the past few years indicate that it does not pay to grow a cover crop without super, and the difference between the growth from applications of one and two cwt. per acre is so outstanding that at least two cwt. per acre has proved an economic proposition. Next year we will be trying heavier dressings than two cwt. and note the result.

In applying heavy dressings of super at the time of planting a cover crop it should be borne in mind that even if the application seems more than that which the legume is capable of using, it will be ultimately used by the vine when necessity arises. We often hear the expression that water soluble phosphates become locked in the soil if applied at a shallow depth and while coming in contact with lime influence, but this is hardly a correct expression, as it may possibly revert to an acid soluble or citrate soluble form; therefore, it will become liberated slowly, but it is a mistake to imagine that the word "locked" means that it will be of no further use to the vine after having been in the soil for some time.

The matter of fertilisers

is giving us a good deal of thought in the last few years, owing to the steady decline in Baume test for distillery fruit and a lesser "body" in our dried article. In some instances the theory is advanced that this is due to seasonal conditions, and that owing to a comparatively mild spring there is a lack of balance between leaf growth and fruit development, resulting in low Baume tests. Another theory is that our soils lack certain elements to create sugar substances in the fruit, and that owing to heavier dressings of nitrogenous manures in recent years and the growing of cover crops a lack of balance has been set up which could be remedied by heavier dressings of super, or perhaps potash. Some individual growers claim good results

from potash applications,

and to try and come to some definite conclusions on this matter the Pacific Potash Co. has made three bags of muriate of potash available for a term of three to five years. One bag is to be used by Mr. J. N. Price on Sultanas, one bag by Mr. F. Hooper, to be used on Doradillos, one bag by Mr. O. Weste, to be used on Currants. As the types

of soil on these three holdings differ somewhat in constitution, the results from a three-year trial should prove interesting. Definite amounts of fertilisers to be used is difficult to arrive at, at any time owing to the contradictory evidence from recognised experiments, and in this matter we must be guided by individual results, taking into consideration the class of soil on which applications are made. Almost every type of soil constitutes a separate problem, which can only be dealt with by careful observations by the man on the spot.

Working Bee for Ex-Soldier.

The way in which the Australian Digger helps his mate when occasion arises must meet with the appreciation of everyone fighting the battles of the man on the land. In many instances war service has left its mark, with the result that a Digger is occasionally laid up.

Last week, Mr. "Nobby" Briers had to undergo an operation, and will be unable to work for some time. Hearing of his misfortune, about 32 blockers and their sons assembled and formed a working "bee" to do his pruning. In a day's work, these 32 blockers pruned and pulled off 16 acres of vines, the work being done with a fine spirit of good fellowship. Mr. Briers is one of the "Old Contemptibles," who fought at Mons in 1914 and later went out to Mesopotamia under General Townshend. This same spirit of comradeship is to be found wherever returned soldiers have settled on irrigation areas. A few years ago nearly every Sunday throughout the winter was set aside as a working "bee" in the Block E and Chaffey areas at Renmark for some needy Digger.

Deep or Shallow Cultivation?

In the C.S.I.R. Journal for May there appeared an article by Mr. Eric West, B.Sc., M.S., of the Griffith Experimental Station, on the "Root Distribution of Some Agricultural Plants"; a reprint of this subsequently appeared in the "Citrus News" in the June issue. The writer in question has created a good deal of discussion among growers, for the reason that Mr. West is asserted to have questioned the advisability of deep working of soils, and the passage leading to many discussions is the following—"A certain amount of tillage in the orchard is necessary to destroy summer growing weeds, to incorporate green manure and other organic matter into the soil, and often for the purpose of forming levees or drawing furrows for irrigation water, and in some cases to maintain the soil in such a physical condition that water penetrates readily. It is probable, however, that in all types the less cultivation carried out when plants occupy the soil, and the shallower this cultivation, so long as the essential objects are achieved, the better."

The crux of this subject lies in the last paragraph: "So long as the essential objects are achieved." In Mr. West's

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area, water is supplied by gravitation, and can be obtained when required, so that the conservation of moisture is not the main essential, but where irrigation is carried out on a roster system, and can only be obtained at specified intervals, the conservation of moisture coincident with deep cultivation is one of the main essentials. Those of us practical growers who have tried shallow cultivation have been forced to the conclusion that it is no good under our conditions. In California, scientists have come to the same conclusions as those arrived at by Mr. West, but here, again, irrigation is carried out chiefly by means of pumping from wells, the water being available at any time required, so

that these conditions coincide with those applying at Griffith.

Pruning Competition.

A great deal of interest has been taken over the championship pruning competitions in the River Murray areas, competitors from Barmera, Waikerie, Mypolonga, Moorook and Berri areas contesting at the Government Experimental Orchard, at Berri, on July 5. Mr. E. Leishman acted as judge, and Messrs. F. Arndt and L. Chapple acted as consultative judges. Those who took part in this competition comprised the three competitors who obtained the highest marks in the local areas. The marks awarded for the tree section were as follows:—

Vine Section.

	Currants.	Sultanas.	Gordo.	Total.
Maximum Marks.	100	120	100	320
H. N. Perkins (Berri)	93	106	88	287
G. Elliot (Waikerie)	91	104	88	283
C. Boehm (Waikerie)	89	104	89	282
W. Harris (Berri)	89	104	89	282
J. Robertson (Berri)	90	102	84	276
A. E. Webb (Mypolonga)	87	102	87	276
W. Perry (Waikerie)	89	105	81	275
N. Penney (Barmera)	91	100	84	275
R. Loxton (Moorook)	87	106	81	274
S. Loxton (Moorook)	89	104	78	271
W. Vogt (Mypolonga)	88	100	82	270
R. W. King (Moorook)	88	100	79	267
J. Simpson (Barmera)	87	96	81	264
Mr. H. N. Perkins wins the trophy for top marks in the vine section, Mr. G. Elliot second prize, and Mr. C. Boehm third.				

	Apricot	Peach	Pear	Total.
Maximum Marks.	100	100	100	300
A. E. Webb (Mypolonga)	86	92	87	265
W. Harris (Berri)	86	87	87	260
C. Curtis (Waikerie)	84	85	87	256
W. E. Rout (Berri)	87	85	84	256
H. N. Perkins (Berri)	82	86	88	256
R. W. King (Moorook)	85	80	83	248
R. Loxton (Moorook)	85	81	80	246
W. Vogt (Mypolonga)	81	82	83	246
J. Boehm (Waikerie)	82	79	84	245
G. Elliot (Waikerie)	81	78	85	244
C. Rowley (Mypolonga)	83	80	80	243
E. Liddicut (Mypolonga)	83	80	79	242

Mr. A. E. Webb wins the trophy for the top marks in the tree section, W. Harris second prize, and C. Curtis third.

The highest aggregate for both divisions fell to the following competitors: H. H. Perkins, 543; W. Harris, 542; A. E. Webb, 541. The judge in his remarks commented on the high standard of pruning throughout the competition, and said that he had never seen such a close contest. Mr. H. Perkins is now holder of the Langdon Parsons Cup, which is competed for each year in district competitions. In the evening the prize-winners were presented with their trophies, and the judge (Mr. Leishman) made a critical review of the work done by competitors. Many questions were answered by the judge. Messrs. L. Chapple and N. Fotheringham warmly supported the remarks, and congratulated the prize-winners on their success.—“Nemo.”

South Australian Fruit Marketing Association

Standard Contract Form—Fruitgrowers' Relief—Apple Varieties for Export—Research Programme—Standard Canadian Case Preferred to “Dump” Case.

THE monthly meeting of Executive Committee of the South Australian Fruit Marketing Association Inc., was held at Adelaide on July 6,

There were present: Messrs. H. N. Wicks, J. B. Randell, M. G. Basey, G. W. Selth, T. Playford, J. S. Hammat, R. A. Cramond, A. O. Peterson, H. J. Bishop, F. F. Redden, R. B. Pritchard, D. W. Hannaford, A. R. Willmore, E. S. Mason, and the Secretary (E. W. Mills); apology from Mr. M. Vickers.

The President, Mr. H. J. Bishop, occupied the chair.

Finance.—Financial statement showing balance in bank £351/1/4, was submitted by Secretary and received. Accounts passed for payment, as per list, £21/10/-.

Fruit Growers' Relief Act.—Mr. J. B. Randell reported that application forms had been forwarded to applicants for relief, and the Committee was now awaiting their return, but he thought there was little possibility of any payment being made to growers in South Australia.

Standard Contract Form.—Secretary advised that the Freight Committee had met on two occasions and completed the suggested Australasian Contract Form, and a copy had been forwarded to all States and New Zealand, stating that the form would be considered by the Associations concerned at an early date.

Very complimentary remarks were made by the Secretary of the New Zealand Fruit Control Board on the draft form submitted, and he stated that the Association was to be congratulated on its work, which, if successful, would undoubtedly be of great benefit to the industry.

Correspondence.—Letter from Government Produce Department advising that the Trade Commissioner, London, had been asked to ascertain officially whether there had been any shortage of Pear freight for London during the past season. It was resolved that the Secre-

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LEMONS, ORANGES, GRAPEFRUIT,
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MELBOURNE.

“Fruit World Annual”

Comprehensive review of
Australian and New Zealand
fruit industry.

“The Fruit World,” Box 1944
G.P.O., Melbourne.

tary reply, setting out the information required.

Letter from Mr. J. B. Mills, President, Australian Apple and Pear Export Council, advising reason for permitting experimental non-refrigerated shipments of Apples in the "Aagtekerk."

Letter from Australian Apple and Pear Export Council, enclosing copies of reports from the High Commissioner's office, London, on inspection of Apples and Pears ex s.s. "Mooltan" and "Orford."

Letter from Australian Apple and Pear Export Council enclosing reports by Mr. G. F. Plunkett, dated May 10, on Apples and Pears.

Letter from Australian Apple and Pear Export Council, enclosing copy of letter from Department of Commerce advising that the Orchardist and Fruit Cool Stores' Association of Victoria had passed a resolution that they were of the opinion that the dump case was the best for the export of Apples. It was resolved to advise in reply that the evi-

dence received by shippers in this State, is that buyers definitely prefer the Canadian case.

Also letter from Department of Commerce, enclosing reports on the condition of Apples on arrival, which draws special attention to the immature condition of fruit from all States, and the prevalence of bitter pit. It was resolved to put on the agenda for the September meeting, the question of consideration of early shipments with a view to instructing delegates to the Australian

Black Leaf 40

Death to Aphis (Plant Lice) and Other Insects

Aphis and other insects are common enemies of the orchardist and gardener. Protect your trees, vines and plants with "Black Leaf 40."

In the Orchard and Garden

"Black Leaf 40" is recommended for killing woolly aphis, apple aphis, peach aphis, aphis on roses, other flowers and vegetables, mussel scale (young), Harlequin fruit bug, holly or cross bug, oleander scale (young), San Jose scale (young), red scale (young), red mites (Summer), rutherglen bug, pear and cherry slug, thrip, fine scale (young), pea mite.

In the Poultry Yard

Paint the roosts lightly with "Black Leaf 40" just before the birds go to roost. Body-lice will be destroyed while the flock roosts. To help prevent mites from attacking fowls, tie or tack a piece of heavy cloth around ends of roosts and roost supports and saturate with "Black Leaf 40;" spray inside of house with "Black Leaf 40," three tablespoonsful to a gallon of water to which soap has been added.

"Black Leaf 40" has the endorsement of Agricultural Colleges, Experiment stations and orchardists. It is the World's leading aphis specific. It also kills the young larvae of many chewing insects when sprayed upon them so as to wet their bodies.

Kills By Contact and By Fumes

"Black Leaf 40" has a dual action. It kills plant insects both by fumes and by contact. This double-killing action makes "Black Leaf 40" unusually effective in insect control.

Paint Roosts . . . Kill Poultry Lice

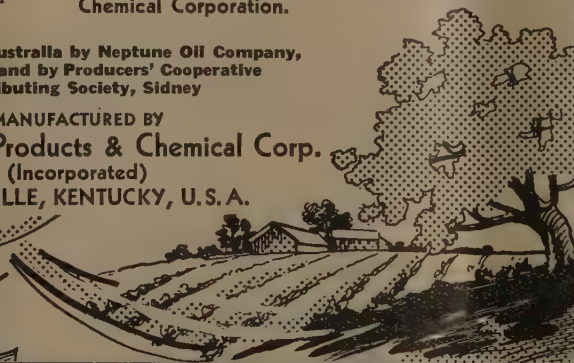
Poultrymen find that if they paint the roosts lightly with "Black Leaf 40" the lice on the birds are killed. The heat from the birds' bodies releases fumes which destroy lice, as the flock roosts on perches.

Genuine "Black Leaf 40"

"Black Leaf 40" is registered by us in Australia and New Zealand as a Trade-Mark and Brand. Users are familiar with the red labelled packages and the black leaf design prominently displayed thereon. Beware of imitations. Insist upon genuine "Black Leaf 40," made only by Tobacco By-Products & Chemical Corporation.

Distributed in Australia by Neptune Oil Company, Melbourne, and by Producers' Cooperative Distributing Society, Sidney

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LOUISVILLE, KENTUCKY, U.S.A.



Apple and Pear Export Council Conference in October.

Letter from Australian Apple and Pear Export Council, advising that it was suggested to hold the Conference the first week in October, and asking if this would be suitable. The Secretary advised that a reply had been sent advising the first week in October would be quite suitable for our delegates.

Letter from Mr. J. H. Hobbs enclosing a copy of report received from his son, Mr. H. Hobbs, on two cases of Apples he received at Leamington, England.

Letter from Government Produce Department enclosing extract from report from Trade Commissioner's office, London, on Gift Scheme Apples, and advising a selection of letter received in connection with the Apples had been sent out to be forwarded to the "Advertiser."

Letter from Miller Patent Case Co. Ltd., advising that Mr. Miller would be in Adelaide before June 29, and would demonstrate the case to the Association. The Secretary advised he had heard nothing further in this connection.

Telegram from Mr. E. Ross, Hobart, Tasmania, asking for advice of total quantity of Apples and Pears shipped by South Australia to England and the Continent respectively. Secretary advised the information had been forwarded.

Letter from Federal Taxation Department, Canberra, re sales tax on fruit wrapping paper.

Telegram from Australian Apple and Pear Export Council, advising Freight Agreements must be cancelled before June 30. Secretary advised that this had been done as far as this State was concerned in February last.

Letter from Department of Agriculture enclosing prospectus and entry forms for Imperial Fruit Show to be held at Leicester, England, in November.

Letter addressed to, and received by Mr. T. Playford, M.P., from the Secretary, Minister of Agriculture, advising that 25 cases of Pears had been made available as a gift to the Association in connection with the Pear Packing Competition at the forthcoming Royal Show, and advising that free storage had been arranged at the Light Square depot until the fruit was required.

Pear Packing Competition. — Attention was drawn to the fact that the competition had been arranged for juniors, whereas, the sub-committee had in mind a senior competition. It was resolved that this should be altered in future years.

A.O.T.A. Conference, Sydney. — Mr. H. J. Bishop reported on the result of the recent conference, and advised that at the present time there were no contracts in existence.

Levies. — Secretary reported that levies had been received up to date from nine (9) shipper-members.

Membership. — Application for membership was received from Messrs. Smith and Loftes, Brokers, Pirie-street, Adelaide. It was unanimously decided to admit them as members.

Export Varieties of Apples. — Lists were received from the Government Produce Department, and George Wills & Co. Ltd., setting out varieties of Apples considered most suitable for export, and after discussion it was resolved that the following be approved as the most desirable varieties for growth and export.

Granny Smith	Romes
Cleos.	Democrat
Rokewoods	Jonathans
Statesman	Stone Pippins
Dunns	London Pippins

This list was considered to set out generally, but not definitely, the order of popularity.

Mr. McCann's Address. — The President stated he considered we should note in the minutes Mr. McCann's remarks at the recent meeting in regard to the satisfactory packing, get up, and classification of South Australian Apples, and his appreciative reference to the improvement brought about as the result of the work of the Association.

Mr. J. B. Randell reported that at the meeting this morning Mr. McCann had stated that he considered the Apple industry was the best organised in Australia out of all those shipping primary products overseas.

Mr. Selth mentioned that Mr. McCann had referred to the very noted improvement in the weight of South Australian fruit as the result of the work done by the Association, two or three years ago, and he particularly stressed the necessity of keeping up the present standard, as it was very easy to slip back.

Research Sub-Committee. — Mr. H. N. Wicks reported that at the Research Sub-Committee meeting a discussion had taken place in regard to spraying and control of pests, and that members had been asked to bring their reports to the next meeting in reference to manurial tests, and they had also further discussed the question of adopting "counts" instead of "sizes" for export fruit, and they wished to again bring this matter forward. It was resolved that this question be placed on the agenda for the September meeting for discussion and instruction to delegates to the Australian Apple and Pear Export Council Conference.

The President stated that Mr. F. F. Redden had recently returned from a visit to India, and asked Mr. Redden if he would report on his visit and any matters of interest to members in connection therewith. Mr. Redden stated that if possible he would make a short report at the next meeting.

NOTES ON POTASSIC FERTILISERS

POTASSIC FERTILISERS are, as to 95 per cent., recovered from a vast subterranean bed, which extends from the U.S.S.R. in a south-easterly direction right across Europe into Spain.

Many exhaustive series of trials have been conducted, with the object of deciding which of the two forms of potash — muriate or sulphate — is generally preferable. So far as Australia is concerned, it may be taken as definite that for Tobacco and Pines the sulphate is preferable. In all other cases, muriate may be used, except in soils which are very deficient in lime. Here the sulphate is preferable, unless it is possible to apply lime (and, of course, this is very desirable for many reasons).

It may be of interest to record the consumption figures of potash in other countries. In 1929 Germany used 900,000 tons, U.S.A. 380,000, France 250,000, Holland, Belgium, the Scandinavian Peninsula from 100,000 to 200,000 each, and Italy and Spain close up to 100,000 tons. In that year the world consumption was just below 3,000,000 tons. It is interesting to note that England's consumption has increased five-fold in five years, the figures being, 1928-29, 10,500 1931-32, 45,000 tons; 1932-33, 52,000 tons.

Generally, in countries of older agricultural history than Australia, potash is regarded as essential on all fruit crops, vegetable and market garden crops, roots (including Potatoes), pastures (especially dairy pastures and lambing paddocks), and on tropical products (sugar, tea, coffee, etc.) It is largely used on Flax, Rice, Malting Barley, and also on Wheat and Oats, especially when grown for hay.

In Australia, its use is so far mainly confined to Sugar Cane, fruits of all kinds, vegetables and Potatoes. Recent investigations indicate that it will soon be in demand on pastures.

"GOOD OLD 'FRUIT WORLD.'"

Appreciation From N.S.W.

Dear Sir, — Please find subscription to the good old "Fruit World" and "Fruit Annual." With best wishes to the paper. — (Signed) J. P. Lindfield, Towac, N.S.W. (6/7/34).

Was This Chipperfield: "Why did you leave the hospital without the doctor's permission?"

"Oh, just to show there was no ill-feeling."

After the Test Match!

Husband (after visitors have departed): "My dear, I don't think our guests could have cared for that cake of yours. The loud-speaker's full of it!"

THE . . . Market Grower

Market Gardener's Annual
Meeting ∴ Market Gardens
∴ around Melbourne ∴
Tomato Notes ∴ Cucumbers

Official Organ of the Market Gardeners and Fruitgrowers Society of Victoria.

President: E. A. Le Page.

Vice President: Cr. A. Bunny.

Committee: G. Ryan, C. James, C. Baker, L. Lawrence, J. Hawkes, J. Stocks.

Arbitration Committee: H. V. Barnett, W. Simmonds, E. A. Le Page, H. Besant, W. D.

Barnett. Secretary: Cr. C. C. A. George, Highett Road, Moorabbin, Vic.

MARKET GARDENERS' AND FRUIT- GROWERS' SOCIETY.

Important Annual Meeting.

"Industry on the Up-Grade."

THE annual meeting of the Market Gardeners' and Fruitgrowers' Society of Victoria was held at the Moorabbin Hall on July 19, 1934, Mr. H. V. Barnett, president, being in the chair.

The meeting took the form of a social function.

The president stated that market gardeners were facing the future with more confidence, as the industry appeared to be on a better footing, nevertheless the need was urgent for obtaining relief in the way of reduced water rates and lower costs for manure. With the alteration in the municipal representation on the Metropolitan Board the desired relief in water rates previously refused, might now be secured. He thanked the executive for their splendid service.

The eleventh annual report was presented by the secretary, Cr. C. C. A. George. He referred to the efforts to secure lower water rates, but the result so far had been negative. The committee had protested against the endeavour to create Moorabbin a city, stating the time was premature.

The balance-sheet showed a credit of £209.

Correspondence. A request from the Fruiterers' and Greengrocers' Association recommending space for the parking of vehicles between the sheds at

the Victoria Market, was not approved on the score of congestion. Mr. J. W. Aspinall, Southern Fruitgrowers' Association, stated that the fruitgrowers concurred with the decision of the market gardeners.

Floral Parade and Battle of Flowers. The Shire Council, wrote, stating that they would contribute £25 towards the expenses of three floats at the floral parade and battle of flowers in late October or early November. The floats to portray the production of Moorabbin Shire. Messrs. Barnett and Stayner were appointed to represent the Market Gardeners' Association on the committee dealing with this matter.

Increased Accommodation at Markets. The City Council Markets Committee advised the increase in what were previously "off" days. The Monday, Wednesday and Friday markets were now improved. Saturday's market, once the biggest, was now the smallest. To erect new shed, as requested, would be costly.

It was decided, by resolution, to press for more shed accommodation, as other considerations outweighed the apparent temporary loss. Extra accommodation was urgently needed.

The toast of Parliament was honored at the instance of Cr. Bunny, supported by Mr. C. Porter. The Hon. A. E. Chandler and W. Tyner were congratulated on their re-election to the Legislative Council.

Hon. A. E. Chandler outlined the efforts he had made to secure a reduction of water rates. An approach to the Government was of no avail, as the Metropolitan Board was "a law unto itself." He had interviewed the chairman, Mr. Bell, but the finance committee had reported that owing to the state of the board's finances, it was regretted that no reduction could be made on the rate of 1/- per thousand gallons. Continuing, Mr. Chandler stressed the necessity for more market accommodation. He stated that in March last producers were placed at the top of K. and L. Sheds, but they were frequently shifted, and this procedure was a nightmare. During December and January, in the peak of the soft fruit season, the growers' waggons were parked in the streets surrounding the markets, but later in the year surrounding stalls were empty, and growers were put off the street into the

sheds. He did not think the Monday and Wednesday markets were much good to producers. Growers would have to work on Sunday to get ready for Monday's market, and this was not desirable.

He did not agree with the committee's opposition to the creation of Moorabbin as a city. He believed that they would benefit by the increased prestige, also that the producers would not be penalised by higher rates. He urged producers to register under the new Motor Registration Act, thus saving a third of their motor registration fees. Producers were free to use their motor trucks for all business and even social purposes, provided they did not use their vehicles for hire. Many of the difficulties feared by the growers under the Transport Bill were illusory. It was impossible to include all exemptions in an Act of Parliament. Producers were free to use their vehicles, except as a means of transport for profit.

The Hon. W. Tyner expressed pleasure at the opportunity of being of service to the producers in the matter of the extension of the hours of sale at the Victoria Market. During this time of economic nationalism in Great Britain and other countries it was necessary to develop the home market. The Legislative Council was in active sympathy with the primary producers.

Mr. W. A. Thiele, president, Southern Fruitgrowers' Association, spoke of the necessity for increased accommodation at the Victoria Markets, despite the apparent first loss which had been mentioned by the City Council, only small trucks could get into the lower market.

Mushroom Growing

Is Profitable whether Grown as a Hobby
or Commercially.

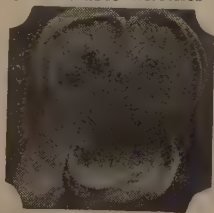
Add to Your
Income by Growing
Mushrooms.

Send 2/6 Postal
Note and we will
send by return
mail our 1 lb.
packet—enough
for 26 sq. feet.

"SPANIARD" BRAND SPAWN

This Can Produce Over 30 lbs.

R. MAS No. 1 Wharf, Circular Quay
SYDNEY



"Plane" Brand Dusts

"Beauty" (Knapsack) Dusters

"Superior" (Rotary) Dusters

ARE MANUFACTURED BY

N. N. McLEAN Pty. Ltd.
MELBOURNE

He urged the appointment of a liaison officer between the Market Gardeners' Association and the Southern Fruit-growers' Association.

Mr. J. W. Aspinall, secretary, Southern Fruitgrowers' Association, spoke appreciatively of the efforts of the Market Gardeners' Association and their executive officers.

Office-bearers were elected as follows—President, Mr. E. A. Le Page; Vice-President, Cr. A. Bunney; Committee—Messrs. D. Ryan, C. James, C. Baker, L. Lawrence, J. Hawkes, and J. Stocks; Secretary, Cr. C. C. A. George; Delegate to Chamber of Commerce, G. Ryan; Arbitration Committee, H. V. Barnett, W. Simmonds, E. A. Le Page, H. Besant, W. D. Barnett, and C. C. A. George.

Official Organ. Mr. Barnett spoke appreciatively of the "Fruit World and Market Grower," and moved that this be the official organ of the Market Gardeners' and Fruitgrowers' Society. Mr. C. Porter seconded. Mr. W. A. Thiele said that this publication had been of great service to fruitgrowers. The resolution was carried unanimously.

A resolution was also carried—"That the market gardeners and members of the society observe Anzac Day as a close holiday, in keeping with all other industries,—only doing what was absolutely necessary.

The secretary, Mr. C. C. A. George, was recommended for nomination on the Advisory Board and the Markets Committee of the Melbourne City Council.

Market Gardens around Melbourne

MARKET GARDENING has been developed to a remarkable degree around the City of Melbourne, the produce being sold in the Victoria Markets, Melbourne.

The produce is conveyed by motor truck and horse waggon, in fact motor trucks now bring in market garden produce from distances up to and exceeding 50 miles. This of course is apart from the Peas, Beans and other vegetables which arrive from the country districts and interstate. While still again, large motor transports operated commercially as such bring substantial quantities of fruit and vegetables from distances ranging from two hundred miles and under.

* * *

It was a pleasure for a representative of the "Fruit World and Market Grower" to call on some of the outer suburban market gardens.

Mr. H. V. Barnett, President of the Market Gardeners' and Fruitgrowers' Society has a well kept 16 acre garden in Spring-road, Moorabbin, in which are produced substantial quantities of Parsley, Mint, Horseradish, Herbs, Onions, Carrots, Parsnips, Beetroot, Radishes and Lettuce.

Mr. Barnett has displayed much activity in all matters connected with the

improvement of the conditions affecting market gardeners.

He strongly supports the efforts which are being made to secure a reduction in the water rates.

Mr. E. Le Page, Wilson-street, Cheltenham, has a 20 acre market garden where the soil is sandy loam. By rotating crops and plentiful manuring, vegetables of high quality are produced.

Vegetable lines include Cauliflower, Cabbage, Beet, Parsnips and Carrots.

At the time of our visit Onions were in the course of being transplanted, the variety being brown Globe.

With regard to Cabbage, the Drum-head variety was being harvested for market, these to be followed with varieties such as East Ham and Irish.

The Carrot varieties include Stump Root and Half Long. Mr. Le Page is now trying out the Chantenay variety.

With regard to Beetroot, we noted splendid specimens of the Crimson Globe variety, seeds being supplied by Law, Somner Pty. Ltd. Another variety slightly smaller and not quite so shapely was Yates' Derwent, yet from the standpoint of flavor the latter would probably be superior.

The question was raised in the conversation as to the educating of the public to ask for certain varieties. In appearance the Crimson Globe would probably bring a slightly higher price than Derwent, yet if the housewife tried Derwent, liked it, and asked for more, this variety should really bring a high return, despite its slightly less favorable appearance.

Mr. Le Page is Vice-President of the Market Gardeners' Association, and would be glad to see methods introduced for better distribution.

In the opinion of Mr. Le Page, it would be a good thing if the City Council were to bring in a regulation preventing the parking of cars around the market area after 8 o'clock in the morning. It would have the effect of making buyers secure their purchases promptly and thus do away with the present undesirable type of buyer who hangs off until the last moment in the hope of securing vegetables at lower prices, the grower preferring to clear his load rather than cart it back again.

With regard to Onions. The operations of the Onion pool were being closely followed. Until the New Zealand embargo, large quantities of Onions were shipped to New Zealand, as many as 3,000 tons during the season. It was hoped that the recent quarantine conference between Australian and New Zealand scientists would result in more freedom of trade in products between the Commonwealth and the Dominion.

Mr. Le Page mentioned the necessity for more research work and attention to gardeners' problems, such as the Pea mite, black leg and club root in Cauliflowers and Cabbages.

Tests are being made at these gardens in conjunction with Nitrogen Fertilisers Pty. Ltd., regarding the most suitable manures for various crops.

Mr. W. Marriott, of Tucker-road, Bentleigh, has 50 acres under vegetables, the principal crops being Cauliflowers, root crops, Potatoes, and Onions.

Onion varieties include Early White Globe and Late White. Constant attention is necessary to keep strains up to standard. The best types of Globe Onions are sent to growers in Gippsland for the production of seed. Seeds for the White Onions are produced at Sealake.

In Potatoes the main variety is Carmen No. 1. By successional planting, crops are maintained over the greater part of the year. The seed Potatoes are from Romsey.

A heavy manurial programme is carried out here, both with stable manure and artificial fertilisers, in fact, the manure bill is quite a heavy one, and would probably range around £10 per week.

Mr. Marriott feels very strongly that their water rates should be reduced. Although the previous approach to the Metropolitan Board of Works in this connection was resultless, the effort should be continued. In all realms of commerce, Mr. Marriott points out, the large wholesale users receive commodities at lower prices, which is just and reasonable, and it is certainly unreasonable that market gardeners who use enormous quantities of water and are amongst the best customers of the Metropolitan Board, should have to pay the same price as the ordinary householder, namely 1/- per thousand gallons.

Law Somner Pty. Ltd.

Sow Now

Two Good Investments

MELBOURNE MARKET PEA.

A Very Early Pea, Three Weeks Earlier than Greenfeast. Catches early market for high prices. Very prolific. Grows 18 in. Price, 1/- lb., posted 1/8 lb.; 15/- ½ bus.; 27/6 bus.

ONION.

White Imperial Spanish.

Flesh is snow white, Mild and Sweet, a long keeper. Comes in after Silverskin and Early Globe. Catches the market before Brown Spanish are available. Very heavy cropper. This season's crop yielded 22 tons per acre. 2/- oz., 7/- ½ lb., 25/- lb. posted.

Brown Spanish.

Selected Long Keeping Strain.

Best on the Market.

6/- per lb. posted.

1934 CATALOGUE

Posted on application.

LAW SOMNER Pty. Ltd.

21-23 Elizabeth Street, Melbourne.
P.O. Box 1232, G.P.O., Melbourne.

Improved Growth of Cucumbers Under Artificial Light

Important Tests in England.

AT THE end of a five weeks' test, Cucumber plants grown in a hothouse under artificial light were found to be 30 per cent. taller and considerably more robust than control plants, grown for purposes of comparison, in the same house under ordinary conditions. Such is the preliminary result of an interesting experiment just announced, and conducted by Dr. W. F. Bewley at the Experimental and Research Station, Cheshunt, Herts, Eng., with a Philips neon lamp.

As well as Cucumbers, Lettuce seedlings also showed improvement in growth as the result of the extra light. During November and December, young plants of Tomato, Cucumber and Lettuce were illuminated for five hours a day with the Philips neon lamp, which was placed at a height of 3 ft. above the plants. Controls grown in the same house were, of course, carefully shaded from the light of the neon tube.

At the beginning of January, the lamp was transferred to the Cucumber propagating house, again fixed 3 ft. above the plants, and raised periodically as they increased in height.

The light produced by the neon lamp contains practically no heat rays, and, further, is of an intensely red color; light of this kind induces the formation of larger quan-

ties of carbohydrates in green leaves; on that account, as well as for its absence of heat, it is especially suitable for the purpose.

The plants were illuminated generally from 5 p.m. until 10 p.m. The experiment began on January 5, when Cucumber seeds were sown in boxes under the lights, and other seeds were sown as controls. When the plants reached a suitable condition, they were potted, first into 3-in. pots, and then into 4½-in. pots, as is customary with this crop.

Four weeks after sowing, the illuminated plants possessed the same number of leaves as the controls, but the leaves were larger and the plants more robust. At this stage, Dr. Bewley found that the light appeared to have a slightly hardening effect on the leaves. Throughout the duration of the experiment, the leaves of the illuminated plants were darker in color than those in the control house.

During the first experiment in artificial irradiation, considerable difficulties were encountered, owing to the problem of trying to find a strong lighting system which was not accompanied by emanation of heat; neon tubes were eventually chosen, as providing red light without heat, but being operated on an exceedingly high tension, there was some risk of shock.

The problem was finally solved by having a neon lamp specially designed for hothouse use; the Philips neon tube used in the Cheshunt experiments fulfilled all requirements, for, operated at a low tension, it produced a red light without emanation of heat or danger of shock.

Vegetable Seeds Characteristics

The 1934 Seed Trade Buyers' Guide and Directory of America, gives characteristics of vegetable seeds which we think may be of interest to our readers. The figures of course are approximate only, as conditions of growth, harvest, and storage, and varieties, are likely to cause variation.

Vegetable.	Average Germination 1 year old Seed.	Average Duration of Germinating Power in Years.	Average Number of Seeds per Ounce.	Average Weight of Quart of Seed in Ounces.	Amount Required for 100 feet of Drill.
Beans, Dwarf . . .	90%	3	100	30	1 lb.
Beet, Garden . . .	80%	4	1,750	10	1 oz.
Brussels Sprouts .	85%	4	6,500	24	½ oz.
Cabbage	85%	4	5,000	24	½ oz.
Carrot	75%	3	14,000	12	½ oz.
Cauliflower	75%	4	14,000	24	½ oz.
Celery	80%	3	100,000	16	½ oz.
Kale	85%	4	7,500	24	½ oz.
Leek	80%	2	8,000	18	½ oz.
Lettuce	90%	6	16,000	14	½ oz.
Onion	80%	2	12,500	16	1 oz.
Parsley	70%	1	17,500	12	½ oz.
Parsnip	75%	1	2,800	10	½ oz.
Peas	90%	3	50 to 150	30	1 lb.
Radish	90%	4	5,000	24	1 oz.
Spinach	80%	3	3,000	14	1 oz.
Tomato	85%	3	7,500	10	½ oz.
Turnip	90%	4	10,000	24	½ oz.

Sowing Rates for Clovers & Lucerne

The value of leguminous plants, not only for grazing,

but also in systems of crop rotation, can scarcely be over-emphasised. The following quantities of seed per acre are recommended:—

	Clovers.		
	Alone.	In Pasture	Mixtures.
Perennial Red strains	10 lb.	2 lb.	
White strains	6 to 8 lb.	2 lb.	
Berseem	10 to 12 lb.	Not recommended.	
Crimson	10 to 12 lb.	"	
Subterranean	3 to 4 lb.	1 to 2 lb.	
Alsike	6 to 8 lb.	2 lb.	
Biennial Bokhara . .	10 to 12 lb.	2 lb.	

Strawberry Clover seed, which is costly, may be used at the rate of ½ lb. per acre, scattering a few seeds here and there in damp spots, where it will rapidly germinate, and the plants will quickly spread.

Lucerne.

For hay and green feed	10 to 15 lb.
For grazing	2 to 4 lb.
In pasture mixtures	1 to 2 lb.

The pamphlet from which the foregoing paragraphs are taken contains detailed recommendations for different districts, as well as directions for sowing. It is obtainable free on application to the Department of Agriculture, Box 36A, G.P.O., Sydney.

This works out at £39 per acre cubic, whereas their competitors at Werribee paid only 12/- per acre cubic foot. This placed metropolitan market growers at a serious disadvantage. Mr. Marriott points out that his water bill works out from £6 to £8 per week, a far greater sum than would be realised by the Metropolitan Board should the area under market gardens be cut up for building purposes.

For instance, apparently the Board desired to receive 6 per cent. of its investments, but it was wrong to debit these costs against the primary producers, bearing in mind that if houses replaced the market gardens the returns would be probably $\frac{1}{2}$ per cent.

The watering on Mr. Marriott's property is all done by The Don Rose Sprinkler system.

Mr. R. W. Marriott, Centre-road, Bentleigh, has a nice holding of 23 acres producing Lettuce, Cauliflower, Carrots, Parsnips, Turnips, Radishes, Spring Onions, etc.

The produce is sold in the Victoria market three times per week.

At the time of our visit Cauliflowers were averaging 6/- and 9/- per dozen,

which was reckoned to be a satisfactory price. In Lettuce, the Neopolitan variety is favored.

Although Lettuce are produced throughout the year, they are in light supply during June, July and August. The new crop is now planted and coming on nicely. This will be harvested and continuous supplies available from September until the following June. The Lettuce seed is obtained locally through the ordinary trade channels.

Mr. Marriott spoke in appreciation of an address recently given by Mr. Rae, of the Botanic Gardens, dealing with soils.

Mr. Marriott has adopted a manurial programme, and the rotation of crops.

Mr. C. Box, of Tucker-road, Bentleigh, has a nicely kept market garden of some 12 acres, producing Cauliflower, Beet, Carrots, Parsnips, Lettuce, Turnips, Rhubarb, etc. Mr. Box states that Cauliflowers are bringing good prices on Tuesday and Saturday markets. The produce is sold at the Victoria Market, Melbourne.

Regarding Cauliflowers — the local practice appears to be the obtaining of seed of approved strains. By selection,

varieties of Cauliflowers are improved, and they are grown to be ready for market at particular periods. Gallaghers' strain is well spoken of, and Mr. Box states there is a strain bearing his name.

At the time of our visit, Carrots and Parsnips were selling at 1/- a dozen bunches. This price being payable, but not ensuring a failure; Celery, 1/6 to 2/- a dozen, according to size.

Mildura. — Growers are finding that the growing of garden Peas and Beans is a valuable side-line. Because of the earliness of these vegetables, good prices have been received on the Melbourne market.

Grape-fruit in Mildura. — Mr. C. H. Cameron, secretary, Mildura District Co-operative Association, recently stated that the production of Grape-fruit in Mildura and district is now 14,000 bushels, but in five years it is expected to increase to 50,000 bushels.

Hamburg. — Early in July fairly large shipments of Chilean Apples arrived at Hamburg, and as these were mostly in a forward condition, prices for Australian Apples were depressed, especially as local supplies of soft fruit were also heavy.

Marhio Tomato

A New Introduction of Considerable Promise.

(John Douglass, H.D.A., H.D.D., Senior Agricultural Instructor, N.S.W.)

DURING A RECENT trip abroad, the author was very much taken up with two varieties of Tomatoes, namely, Marhio and Low Branch. The former is a glasshouse type, which is very extensively grown in U.S.A. It was realised at the time that this variety was only suitable for hot-house growing, and, therefore, would not be suitable for growing in Australian unheated glasshouses. However, it has

certain characteristics which might well recommend it for outdoor growing in the temperate parts. The plants are semi-dwarf, very vigorous growers, with sturdy constitutions, and possess heavy cropping capacity.

An Ideal Type.

The breeder of Marhio claimed that it was 75 per cent. resistant to fusarium wilt, a feature which makes it especially valuable. The fruit sets in heavy clusters at short intervals along the main stem, the individual Tomatoes being as nearly perfect in shape, quality, color and texture as it is possible to grow them.

Marhio Tomatoes are almost round, deep red in color, with a firm skin, very

thick flesh, and a mild non-acid flavor. The plants reproduced all their outstanding characteristics when tested on Mr. W. A. Robinson's property at Coff's Harbor. **Low Branch Variety.**

Low Branch is another recent importation that promises to do well in this country. Its breeder claims that it is of Earliana origin, although it does not show of any of the Earliana characteristics under the one year's tests that have so far been carried out in this country.

Even if seed is available, Tomato growers should only test out these varieties on a small scale, until they are certain that they will be suitable for the district in which they are to be grown. —N.S.W. Agricultural Gazette.

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Tasmanian Fruit Export

3,048,000 Cases of Apples and Pears Shipped Overseas — Improvement in Packing and Grading, but Early Red Apples Lacked Color — Labelled Softwood Canadian Cases Appreciated — Battery System and Refrigeration Advocated.

(Report by Mr. T. Burnaby, Wharf Representative of the State Fruit Advisory Board.)

A VALUABLE REPORT regarding the export of Apples and Pears from Tasmania was presented at the July meeting of the Tasmanian Fruit Advisory Board by Mr. T. Burnaby, the Board's Wharf Representative. The summary is as follows:—

The consignments had shown a great improvement as regards packing and marketing appearance, especially in the earlier part of the season. The need of higher grade and size standards and a reduction in the quantities exported, together with a shortening of the period of shipment, had become necessary. The quantities shipped were as follows:—

	Apples. (Bushel)	Pears. (Bushel)
Hobart . . .	2,181,421	58,516
Devonport . .	19,234	—
Beauty Point .	483,656	24,000
Port Huon . .	280,810	406
	2,965,121	82,922

The season had been difficult climatically, with drought and bush fires.

The report dealt with the increasing use of motor transport from the orchard to the wharves, even from distances 50

and 60 miles from Hobart. Seventy per cent. of the fruit was now carried in this way. The condition of the fruit was generally good, but, owing to an abnormally dry summer, much of the fruit appeared to mature earlier than usual, especially Cox's Orange and Ribstones, although these had arrived overseas badly pitted. Red varieties lacked color when shipped too early, especially two-inch Jonathan.

Later in the season the colored varieties were excellent, such as Tasman's Pride, Geeveston Fanny, Democrat and Crofton. Cleos. were especially good, and in heavy supply—free from bitter pit and hollow core. Many of the Sturmers submitted later in the season showed an ugly skin scald, and were refused shipment.

Growers complained of inequitable export regulations, — for example, the prohibition of export of Scarlet Pearmain under 2½ inch, while at the same time permitting two-inch Jonathans to be shipped.

Though much of the fruit was better packed, there was still room for improvement. In some brands the "grab" pack was obvious, and the rowing of



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the Apples was uneven and irregular. Severe pressure bruising was caused when lidding down was in process by the Apples being too closely packed and too high in the cases.

The imported softwood cases, which carried an attractive label, stood out conspicuously, and were used by many of the growers for the first time, and quantity used was far in excess of previous seasons.

The Canadian type cases were very attractive, and the striking colored labels denoted the contents to the most casual observers. Some stencil brands were of a slovenly appearance. A uniform and distinctive mark emphasising Tasmanian Apples should be adopted.

The method of dunnaging varied, but the usual was 3/8-inch lathing between each tier, and 2 in. x 2 in. every fifth tier, all placed horizontally athwartships.

The more preferable system of refrigeration was the battery system, by which the air was cooled before entering the hold, and by this method the danger of frosting of the cases and damage by moisture was avoided.

Tamar Shipments.

A deputation, comprising Mr. N. Campbell, M.H.A., and Mr. H. A. Court, a member of the Beaconsfield Council, and a member of the Tamar Farmers' and Fruitgrowers' Association, approached the Minister for Land and Works (Major T. H. Davies) early in July, and requested that the proposal to extend the Beauty Point Wharf should be referred to the Parliamentary Public Works Committee as soon as possible.

Mr. Campbell said that there was only room for one ship to berth at a time, and that thousands of cases of fruit have to be stacked in the open.

Mr. Court pointed out that it would not be long before 1,000,000 cases would be shipped, and asked that the matter be dealt with immediately, so that improvements could be made before the next shipping season.

The Minister promised to submit the matter to Cabinet. It was estimated by the Director of Public Works that it would cost £12,000 to extend the Beauty Point jetty, and an additional £2,000 to widen it for vehicular traffic.

Marketing Fruit in Melbourne

New Association Formed to Advertise Standardised Fruit.

"Victoria Mark" for Best Quality.

A MEETING of fruitgrowers, together with representatives of the wholesalers and retailers, was held at the C.T.A., Melbourne, on July 20, 1934.

Delegates were present, as follows—Messrs. G. Mock, G. Fankhauser, G. C. Karnaghan, M. O. Henderson (East Burwood), J. J. Tully, L. Cole, F. Noonan (Cool Stores); W. A. Webb, Hubert Petty, Zerbe (Doncaster); W. P. Mair, V. Borley (Tyabb); W. A. Thiele, J. W. Aspinall, L. Pepperell (Southern Fruitgrowers); Wynne, Wadeson, Middleton, Hewitt, Lorimer (Diamond Creek); T. Peart (Bairnsdale); J. G. Aird (Ringwood); Jarman (Red Hill); McDonald (Drouin); Aumann (Templestowe); Moffatt (Blackburn); H. W. Wade, F. Cave, W. McGowan (Wholesale Fruit Merchants); E. W. Thompson (Retail Fruiters); Hedditch (Portland); A. S. Harrison (V.F.M.A.); G. Kerr (V.C.C.A.); E. Meeking (Dept. of Agriculture), and the hon. secretary, R. E. Boardman.

Mr. W. A. Thiele was elected chairman.

On behalf of the Provisional Committee, Mr. F. Cave gave details of the committee's findings, and a hearty vote of thanks was tendered on the motion of Messrs. J. J. Tully and L. Pepperell.

It was decided on the motion of Messrs. Mair and Beet—

"That an Association of Fruitgrowers, Wholesalers and Retailers be formed."

Mr. W. P. Mair moved—

"That it be a recommendation to the incoming committee to arrange representation from the following southern districts—Mornington Peninsula, Western, Harcourt and district, Metropolitan, Gippsland and North-Eastern,—with the approval of growers' associations."

Mr. W. A. Webb seconded.—Carried.

It was further decided to adopt the committee's report, as follows:—

Individual membership, growers to be organised into district groups, which will elect delegates to executive, merchants also to elect their delegates to executive.

Objects. To improve the grading, packing, handling and distribution of fresh fruits, and to inaugurate an advertising campaign to increase the consumption of fruits sold under special label, to be known as "Victoria Mark," and the selling of all fruits according to defined standards.

To encourage the production of only such varieties, sizes and conditions of fruits which are best suited to the local and Interstate markets, to encourage the working over of unsaleable varieties, and to conduct field days and demonstrations.

To secure and, as far as possible, tabulate for the information of members, local and Australian-wide crop reports for each season.

To co-operate with the Railway Department and shipping companies with a view to the improvement of carrying services.

To endeavour to obtain reductions in the rates of freight, insurance and other costs.

To form an arbitration panel, to deal with any dispute arising out of the trade in fresh fruits.

To watch the interests of growers and distributors in connection with any existing or proposed legislation or regulations affecting the marketing of fresh fruits.

To co-operate with other bodies having similar objects to the foregoing, and generally to give attention to matters that may make for the betterment of the industry.

To encourage the utilisation of lower-grade fruit in fruit drinks, by-products, and by means of fruit pies, etc.

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It was decided, on the motion of Messrs. J. J. Tully and J. G. Aird—

"That the Provisional Committee be re-elected with power to add." (Committee — Messrs. F. G. Beet, W. P. Mair, V. Borley, R. M. Finlay, F. Cave, H. M. Wade, W. McGowan, E. W. Thompson and R. E. Boardman.)

Additional members were nominated — Messrs. Jarman (Red Hill), G. C. Karnaghan (Blackburn), W. A. Thiele (Doncaster), M. O. Henderson (Blackburn), R. Vail (Wholesale Fruit Merchant).

On the motion of Mr. M. O. Henderson, seconded by Mr. Beet, it was decided—

"That this organisation include in its objects a scheme providing for the distribution of fresh fruits to cities and towns throughout Victoria, in order that retailers and consumers in general may gain the

benefit of our Victoria Mark fruits —thereby increasing the sales of such products."

It was decided to approach the Victorian Fruit Marketing Association requesting that body to grant the use of their name to the new association, as follows:—"Victorian Fruit Marketing Association (Local Sales Section)."

The meeting closed with a vote of thanks to the chairman.

ENGLISH FRUIT SALES.

Much Improved Prices.

London (23/7/34). — Tas. ex. "Port Denison." — Sturmers, 9/3 to 11/3; Romes, 10/- to 10/6. N.Z., ex "Port Hobart, "Port Curtis" and "Fordsdale"—Granny S., 14/- to 17/-; Sturmers, 9/6 to 12/-; Del., 9/3 to 10/-; Doherty, 9/6 to 11/3; Rokewood, 10/6 to 11/9 a case.

FRUIT MARKETING IN N.Z.

Auction at Wellington.

Only limited supplies of fruit are now being sent from Australia to New Zealand. The following particulars, however, will be noted with interest: Messrs. George Thomas & Co. Ltd., Fruit and Produce Merchants, of Wellington (Mr. A. Jacobs, director), write a follow:—

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Citrus fruits we import from United States of America, Jamaica (this year for the first time), Australia, when conditions permit, while the Cook Islands, an integral part of this Dominion, are now our main suppliers.

Bananas, under a quota system, are received regularly from Fiji, the Cook

Victoria.

Melbourne (31/7/34).—Prices quoted by the Wholesale Fruit Merchants' Association yesterday were as follow:—Per case: Apples, eating, 4/- to 6/-; some selected varieties to 8/-; cooking, 3/6 to 5/-. Bananas (double case): Green, 8's and 9's, 14/- to 15/-; 7's, 12/- to 13/-; 6's, 10/- to 11/-; few special higher. Grapefruit, 5/- to 8/- case. Lemons, average standards, 4/- to 5/-; few special higher; small, to 3/-. Mandarins, Vic. and Q'land, 5/- to 8/-; N.S.W., 4/- to 6/-; special higher. Navel Oranges, average standard, 3/6 to 5/-; selected, wrapped standards, 6/- to 8/-; Poorman's, best, to 6/- case. Passion fruit, 14/- to 20/-, inferior lower. Papaw, colored, 9/- to 12/-; green lower, double case. Pineapples, 7/- to 8/- double case; few best counts, 9/-. Tomatoes, hot house, 12/- to 14/- half case; do., West Aust., repacked and ripe, 7/- to 8/-; few special higher; Sth. Aust., 13/- to 14/-. Custard Apples, 3/- to 5/- half case. Celery, Adelaide, 7/- to 9/- half case; selected higher, inferior lower.

The Melbourne market manager of the Federal Citrus Council of Australia reports that sales yesterday were as follow:—Navel Oranges, average standards, 75, 4/-; 112-126, 5/-; 140-154, 5/6, a few 6/-; 168-182, 5/-; selected standards, to 7/-, a few 8/-; specially selected wrapped standard higher, 9/-, best counts, a few 10/-. Grapefruit, best counts (60-75), 5/- and 6/-, a few 7/-; large, from 4/-. Lemons, average standards, 5/-, best counts; a few 6/-; small, slow, to 3/-. Mandarins, Emperors, best counts (180-198), 6/-; a few 7/-; 350 up, slow at 3/-; selected red higher.

New South Wales.

Sydney (23/7/34).—Mr. L. T. Pearce, market representative of the Fruit-growers' Federation of N.S.W., reports prices as follow:—Apples: Crofton, 5/- to 9/-; Cleo., 4/6 to 8/-; Del., 4/- to 12/-; Demo., 5/6 to 8/-; French Crab, 4/- to 7/-; G. Smith, 6/- to 12/-, few shipping lines 13/-; Jon., 5/- to 9/-, few 10/-; L. Pippin, 2/- to 6/-; R. Beauty, 4/6 to 9/-, shipping lines to 10/6; Scarlet Pearmain, 4/- to 7/-; Statesman, 5/- to 8/-; Sturmer, 3/- to 5/-; Winesap, 4/- to 9/-. Pears: Jos., 6/- to 10/-, shipping lines to 12/6; Packham's T., 6/- to 10/-; W. Cole, 7/- to 11/-, shipping lines 12/6; W. Nelis, 6/- to 10/-. Approx. 29,000 cases of Apples are arriving from Tasmania to-day; colored Apples have met with increased demand during the past two weeks, and a gradual improvement in price has been experienced. Most of the French Crabs arriving are colored and are unpopular. Pears: Supplies from Tasmania are very light at present, and except for slight easing in the demand for Packham's T., prices are the same.

Bananas: N.S.W. and Q'ld., 9/- to 18/- trop. case; Fiji, 15/- to 20/-. Demand has been weak throughout the week. Fiji fruit is quite of its usual quality.

Custard Apples (Q'ld), 3/- to 5/- per half; small and ripe, from 2/-.

Citrus: Grapefruit (N.S.W.), local and inland, 4/- to 5/- bush.; small, 1/- to 3/-; large, special, 6/- to 7/-, few higher. Lemons, N.S.W. local, 1/- to 4/- case; inland, 3/- to 5/-, few 6/-; Navels, N.S.W. local, 2/6 to 5/-; inland, 3/- to 7/-; Common Oranges, 1/- to 3/- bush.; Mandarins, N.S.W., Emperor, 2/- to 5/- bush.; Thorny, 2/- to 3/6 half bush.; weak demand is being experienced for

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STH. AUST. ORANGES IN LONDON.

London, 24/7/34.—The S. Aust. trade commissioner (Mr. L. H. Hill) reports that a shipment of Navel Oranges by the "Ballarat" arrived in excellent condition, and all were cleared at from 11/- to 15/- a case.

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all Grapefruit this season. Lemons:—Factories have been operating to a small extent, but prices remain unaltered. Navels:—The sale of this fruit in bags is appealing to most buyers at the present time. Supplies from all sources are plentiful, with prices unaltered. Mandarins:—Steady demand is being experienced for large sizes with smaller sizes inclined to drag. Passion-fruit: N.S.W., 5/- to 10/- half bush.; inferior, 2/- to 4/-; Q'ld., 5/- to 8/- half bush. Increased supplies of standard and plain grade fruit are available, and Q'ld is also forwarding. Papaws, 8/- to 12/-, few special colored higher; Pine-apples, Q'ld, Queen, 6/- to 8/- trop. case; Tomatoes, Q'ld, Bowen, 5/- to 7/- half; re-packed, 6/- to 9/-. Most Q'ld fruit is marketed too immature, and the riper article suffers in flavor and is tough in texture, for this reason N.S.W. supplies have practically ceased.

Brisbane, 18/7/34.—Messrs. Robsons Pty. Ltd., Brisbane, report as follows:

Since writing last, there has been very little change in market values.

Choice colored Tas. Apples selling freely. Jons. to 10/-, Demos. to 9/-, and for the best of the remaining popular varieties to 8/-; French Crabs up to 7/-.

The "popular" varieties referred to, include such as Cleos., Scarlets, etc. Other varieties of Apples, such as L.P's. and Alexanders, etc., do not meet with a ready sale.

Pears continue to sell freely at 13/-, and we anticipate that these rates will continue to be maintained.

Citrus sales are still at low rates, Oranges to 4/6, Navels 6/-, Emperor and Scarlet Mandarins 6/-, and Glens to 8/-. There is, however, a tendency of a slight increase in values for local Citrus.

All vegetables are selling well, Beans realising to 9/-, Peas 8/-, Cabbage 7/- per doz., Cauliflowers 9/- per doz., choice colored Tomatoes to 8/6 and green to 7/6.

Western Australia.

Perth (20/7/34).—Apples: R. Beauty, dumps, plain and small, 3/- to 4/-; standard, 4/- to 5/-; prime, 6/- to 7/-; Yates, 3/- to 4/-, 5/- to 6/-, 6/3 to 8/-; Cleo., 3/- to 4/-, 4/- to 5/-, 5/6 to 6/-; (special to 7/-); Dunn's Seedling, 3/- to 4/-, 4/- to 5/-, 5/6 to 6/-; G. Smith, standard, 5/- to 7/-, 7/6 to 10/-; Doherty, plain and small, 3/- to 4/-, 4/- to 5/-, 6/-; Del., standard, 5/- to 7/6, 8/- to 9/6. Citrus: Navels, flats, 2/- to 3/6 (special to 5/-, others from 1/6); dumps, 4/- to 5/6 (special to 7/6, inferior from 2/-); Lemons, 1/- to 3/-; Mandarins, 3/- to 5/- (special to 6/9, others from 2/6); dumps, 4/- to 6/- (prime to 8/6, special to 10/6, inferior from 2/-).

South Australia.

Adelaide (27/7/34).—Apples (eating) 3/- to 6/- case; do. (cooking) 3/- to 5/-

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case; Bananas (Q'd), 15/- to 20/- crate; Lemons 4/- case; Oranges (Common), 4/- case; do. (Mandarin), 7/- to 8/-; do. (Navel), 5/- to 6/-; do. (Poor-man) 3/-; Passionfruit, 26/-; Pears (eating), 8/- to 9/-; Pineapples, 10/- to 14/-; Quinces, 5/- case.

New Zealand.

Dunedin (13/7/34). — Messrs. Reilly's Central Produce Mart Ltd. report as follow:—Business during the week has been quiet. The market is well supplied with all lines of fruit and produce. Heavy consignments of Apples, principally Sturmers, are coming forward from the Nelson district and meeting only a fair demand. Some good lines of Pears have come to hand and realised satisfactory values.

The "Maui Pomare" arrived in Lyttelton on the 9th with a full shipment of Samoan and Niue Bananas, and the Southern portion came to hand on the 10th, the fruit being in excellent condition. Fairly heavy consignments of Island Oranges have been arriving and netting fair values. A further shipment of Pines arrived during the week, and these were much better quality than the previous consignment, prices being appreciably higher. Lemons from the North are in shorter supply and have increased in value.

Prices: Half cases — Passions, N.Z. 14/-, dessert Pears 3/-, 4/-, N.Z. Lemons 8/-, 9/- Bushel and American cases: Apples, Del. 5/-, 6/-; Jon. 4/-, 7/-; Cleos. 6/-, 7/-; Cookers 3/6, 5/-; Pears: Cooking 4/6, 6/6; Coles Nelis 6/-, 7/6. Cal. Oranges, 45/-; Cal. Grapefruit, 40/-; Cal. Lemons, 52/6; N.Z. Lemons, 18/-; Bananas, Ripes, 17/6; Poorman Oranges, 10/6, 12/-; Island Oranges, re-packs, 18/-; Pineapples, 18/-, 20/-.

Tests by the Council for Scientific and Industrial Research so far favor the "9" dump case for the export of Apples.

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R. CORNISH & SONS (5).
J. HYMAN & SON (51).
HERBERT WILSON PTY. LTD. (10).
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Correspondence is invited by the Association.

J. D. FRASER, Secretary, 21 Wholesale Fruit Market,
Queen Street, Melbourne. Phone F 4866.

APPLE AND PEAR EXPORTS.

1934 Exports Less than 1933.

The Minister for Commerce (Mr. F. H. Stewart) has made available the following information in regard to shipments of Apples and Pears from Australia during the 1934 season, with comparative figures for the previous season:—

Apples.		
	1934.	1933.
N.S.W.	84,599	325,886
Victoria	715,419	1,445,462
Queensland	40,687	19,144
Sth. Australia	541,464	253,126
West Australia	593,203	571,617
Tasmania	2,990,433	3,238,619
Totals	4,965,805	5,853,854

Pears.		
	1934.	1933.
N.S.W.	24,905	45,420
Victoria	223,442	409,622
Queensland	180	117
Sth. Australia	30,995	14,702
West Australia	33,787	52,244
Tasmania	76,843	163,134
Totals	390,152	685,239

While Apple and Pear growers at the N.S.W. Fruitgrowers' Conference voted against the importation of Apples from New Zealand, it was noticeable that the address by Dr. R. J. Noble removed much of the fear of the Fireblight danger which had previously been apparent.

APPLE AND PEAR EXPORT.

Need for Regulated Arrivals in U.K.

Members of the Tasmanian fruit trade state that the unregulated arrival of steamers abroad has done its part in reducing prices to an unfavorable level. Mr. Herbert Rowe, fruit agent and exporter, of Hobart, writing to the "Fruit World," June 20, states that it is hoped that the Australian Apple and Pear Export Council will take up this matter of regulated steamer arrival dates.

Continuing, the firm states: "In addition to fruit from the mainland and N.Z., the following steamers discharged at London during the 14 days ended June 10 (those marked * being large carriers)—"Hurunui," *"Tasmania," *"Corinaldo," *"Port Darwin," *"Nava-sota," *"Stirlingshire," *"Oтира," "Largs Bay," *"Port Huon," "Orama," "Balranald," *"Pakeha."

"These steamers comprise one quarter of the total number of steamers which sailed during the season of sixteen weeks, yet they arrived within a period of two weeks. No market can stand up to this kind of thing, and it is imperative that supplies must be regulated."

Queensland Fruit in Melbourne. The Melbourne representative of the Committee of Direction of Fruit Marketing (Brisbane) advises the following details of Queensland fruit which arrived in Melbourne from March 3 to July 3, 1934 (trains Nos. 9 to 26):—Bananas (cases), 112,408; Pines, 45,834 Citrus, 9,798; Beans, 6,998; Custard Apples,

3,340; Papaws, 412, with smaller quantities of Ginger, Sweet Potatoes, Monstera deliciosa and Avocado Pears.

GRAPES FOR THE EAST.

Exports from W.A.

During the 1934 export season Grapes were exported to the Near East from W.A. as follows:—Colombo (cases) 16,915; Singapore, 10,812; Batavia, 2,115; Sourabaya, 1,085; Samarang, 666; Rangoon, 624; Penang, 162; Bombay, 407; Port Said, 427, and smaller quantities for Aden, Bali, Port Swettenham also to Mauritius.

Grapes for Continent.

Western Australia exported Grapes to U.K. and the Continent as follows (cases):—London, 10,260; Liverpool 399; Glasgow, 363; Stockholm, 1,978.

Victorian Apples in Germany. — According to a report received by the Minister of Agriculture from the Victorian Agent-General in London the 24,000 cases of Victorian Apples shipped to Hamburg on the s.s. "Stassfurt" and "Port Fairy" met a fairly favorable market. The shipments consisted principally of Jonathans and Dunns, next in importance being Romes. The Jonathans, some of which were in rather forward condition, and the Dunns met a satisfactory enquiry, but, because of their lack of color, the Romes were rather neglected. Prices (in English currency, and exclusive of duty) ranged from 6/8 to 15/—, the best varieties realising an average of approximately 10/- per case.

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